THE GRILL

FIRING UP THE GRILL
This week we introduce The Grill, our new weekly Q&A. In the first installment, the Electronic Frontier Foundation's Fred von Lohmann talks about the limits of copyright laws in the Digital Age. **PAGE 12**

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Revolt Against Digg Tests User Content Model

'Internet riot' forces Web site to stop deleting posts containing software key

BY HEATHER HAVENSTEIN

Digg Inc., which operates a news aggregation Web site that lets users determine the placement of stories through voting, last week found itself at the center of what some analysts and academics are calling a test case on who has control over user-generated content on social networking sites.

What happened on Digg.com was described even more trenchantly as "an Internet riot" by many bloggers and online posters. And the outcome was clear: The rioters won.

The brouhaha erupted on Tuesday when Digg staffers began removing posts that contained a software key for cracking the encryption technology used to limit copying of HD-DVD and Blu-ray discs. Digg, which took action after receiving a cease-and-desist letter from the encryption technology's developer asserting that the posts violated its intellectual property rights, also started deleting the accounts of users who were posting the key.

> They were saying . . . 'You have given us this power, and you can't take it away on this issue.' We listened.
>
> JAY ADELSON, CEO, DIGG.COM

The two moves outraged many Digg.com regulars, who repeatedly posted the key until company founder and chief architect Kevin Rose relented that night and put a stop to the deletions.

Dianne Lynch, dean of the communications school at Ithaca College in New York,

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You've Been Hacked. Now What?

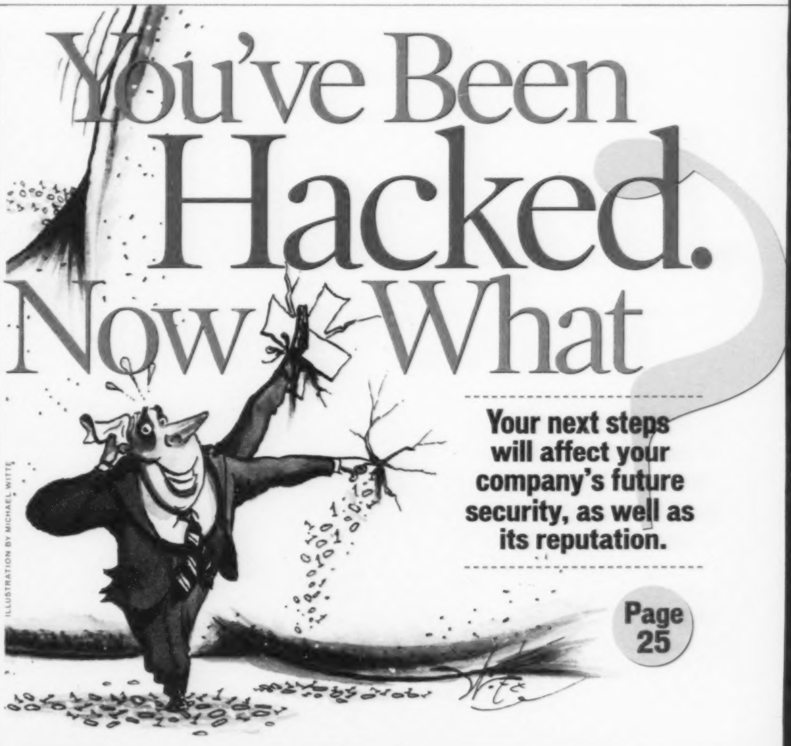

ILLUSTRATION BY MICHAEL WITTE

Your next steps will affect your company's future security, as well as its reputation.

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IT Managers Face Crunch In Filling Open Positions

Execs, recruiters say rising demand for tech workers is making hiring harder

BY PATRICK THIBODEAU

Last month, Timothy Ramsay, assistant vice president of computer and network services at the University of Miami, filled a security manager position. But it took a yearlong search and a 30% increase in pay over the original offer.

Ramsay said the search was so difficult because of increased IT hiring activity, particularly in hot job areas such as security, database administration and project management. Salaries also have become a big issue in South Florida, where housing prices have soared. The university is now studying across-the-board pay increases for workers in IT and other departments to help them deal with the region's high cost of living, Ramsay said.

But the hiring crunch that he experienced isn't limited to South Florida. The IT job market is improving nationally, according to several recent reports on technology employment trends. At the same time, though, it appears to be getting harder for employers to recruit people to fill the job openings they have.

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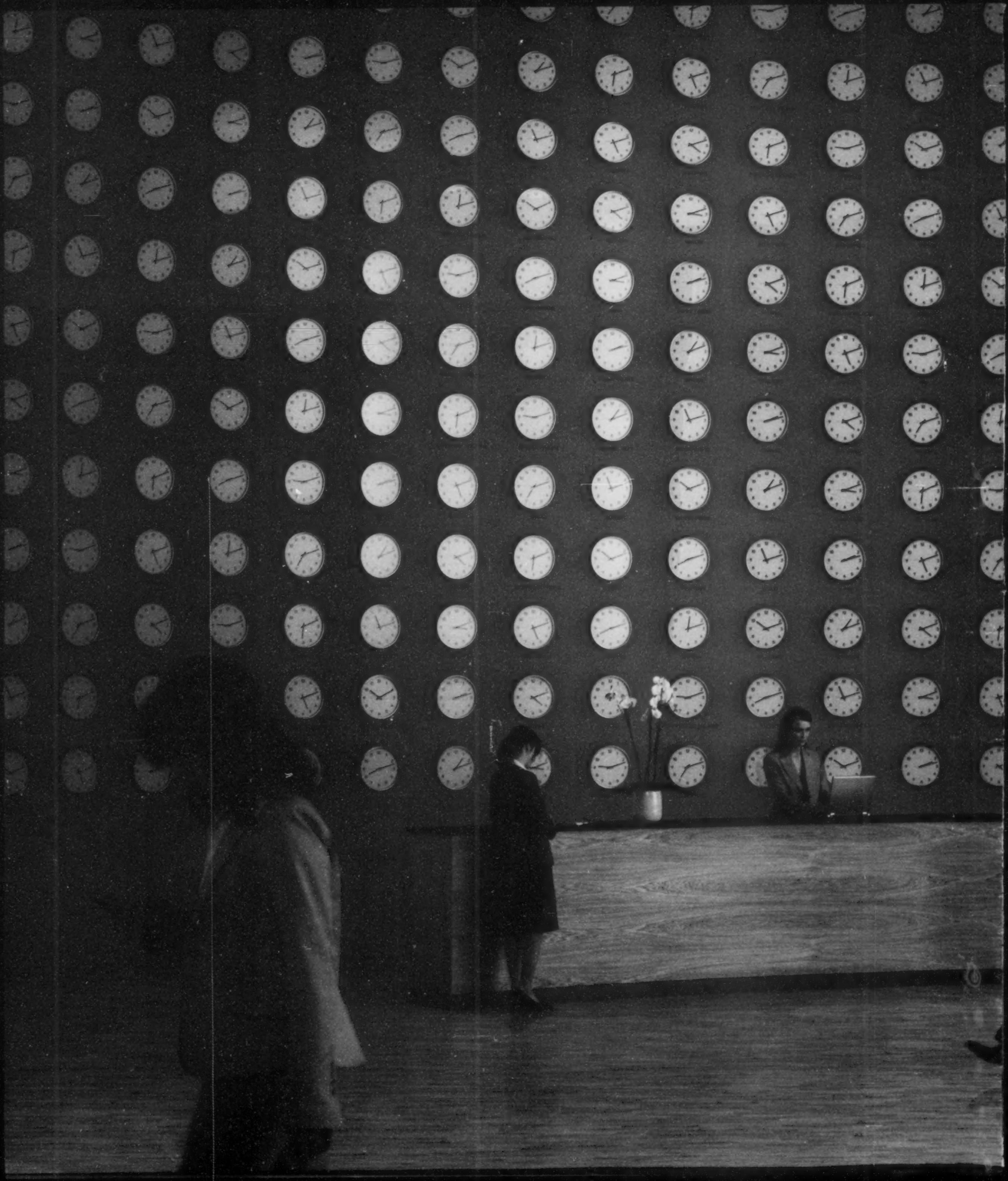

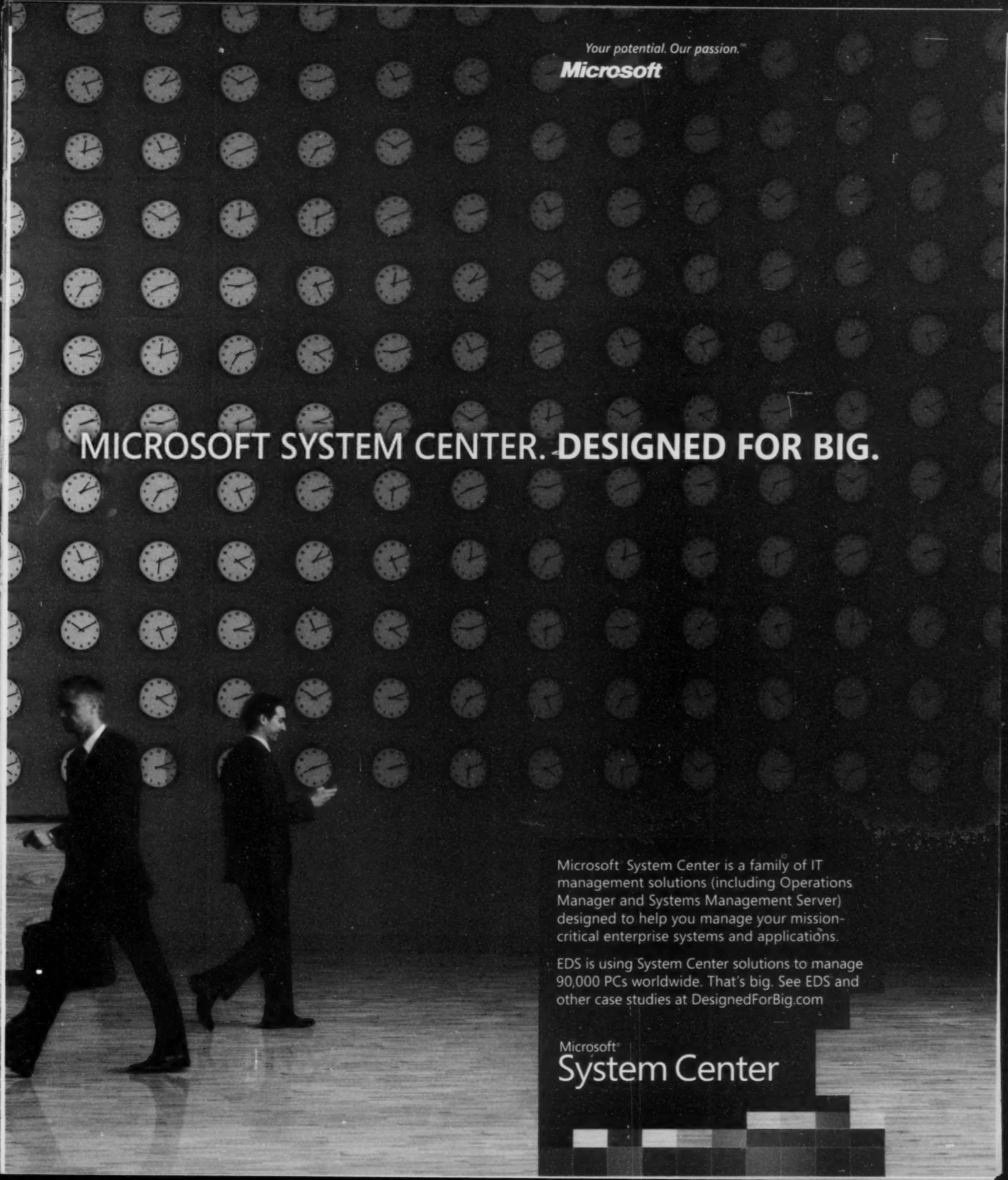

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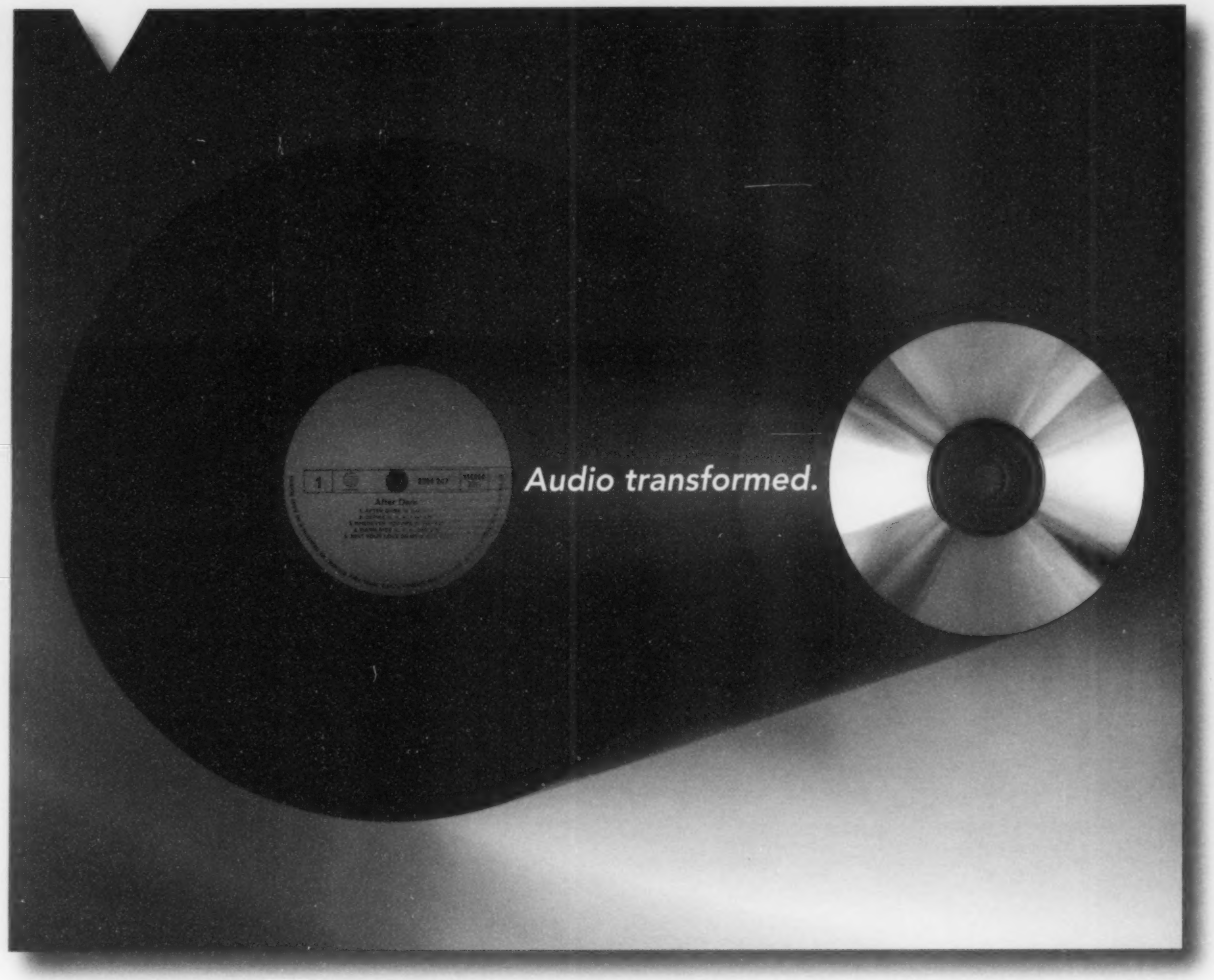

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BELLE MELLOR

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The use of security appliances is growing, but how, when and where they're used makes all the difference. The question prospective users need to answer is, how much security do you need in a particular location? **Page 30**

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INTRODUCING

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Hands On: Show Office 2007 Who's the Boss

SOFTWARE: We review three tools that tackle Office 2007's locked-down user interface. Two take you back to the menus of Office 2003, and a third lets you customize the Ribbon itself. **www.computerworld.com/software**

Why E-books Are Bound to Fail

MOBILE AND WIRELESS: Companies have spent millions of dollars over the past couple of decades developing what they hope will be a device that replaces the paper book. Unfortunately, their products are destined for failure, says columnist Mike Elgan. **www.computerworld.com/mobilewireless**

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AT DEADLINE

Dell Mulls Layoffs To Boost Business

Michael Dell is considering layoffs and acquisitions at Dell Inc., according to a memo he sent to the company's 78,000 employees last month about options to break the company out of its business doldrums. Dell said that the company could even change the direct sales model that moved it from a Texas start-up in 1984 to the world's largest PC vendor in 2006, he said.

AMD Unveils Chips For Mobile Systems

Advanced Micro Devices Inc. has introduced a new chip set for mobile computing on wireless networks, preempting Intel Corp.'s expected unveiling of the next version of the Centrino chip, code-named Santa Rosa, this week. AMD has begun shipping the new M690 mobile chip set and said that it could be included in notebook computers from Hewlett-Packard Co., Dell and Acer Inc. by the end of May.

Intel to Cut 1,000 Jobs in New Mexico

Intel Corp. plans to lay off as many as 1,000 workers when it stops producing flash memory chips in August at a fabrication plant in New Mexico. Intel has come under pressure from Wall Street analysts to improve conditions in its flash memory group, which has reported sinking revenue and growing losses. The division lost $283 million on revenue of $469 million during the first quarter of 2007.

Congress Passes Antispyware Bill

The U.S. House Judiciary Committee has passed an antispyware bill that would make it a criminal offense to place unauthorized code on a computer and use it to obtain or transmit personal information or to impair a system's security protections. The Internet Spyware Prevention Act provides for fines of up to $3 million and prisons terms of up to five years.

Microsoft to Let Partners Guide Users to Silverlight

Vendor won't bundle Flash rival, hopes users will download tool 'voluntarily'

BY ERIC LAI
LAS VEGAS

AS PART of its foray into the Web design tools market, Microsoft Corp. is eschewing its usual tactics for encouraging — or, as many of the company's critics would put it, strong-arming — end users to adopt its technology.

Microsoft isn't bundling its Silverlight software, which it hopes will unseat Adobe Systems Inc.'s Flash as the dominant rich-media presentation technology, into Windows or Internet Explorer. Nor is it making the browser plug-in an optional or automatic download via Windows Update.

Instead, Microsoft officials said last week that the company is betting that partnerships with high-profile Web sites will quickly lead to widespread adoption of Silverlight.

"We want to get people to voluntarily download," Forest Key, director of product management for Microsoft's Web design tools, said at the software vendor's Mix07 developers conference here.

Repairing Reputation

Windows Update's reputation was tarnished last year after Microsoft used the service to stealthily roll out Windows Genuine Advantage (WGA) Notifications, its controversial antipiracy tool. Asked if the WGA debacle led Microsoft to avoid using Windows Update now, Key said, "Because [Silverlight] is a customer experience, we want to create a positive association, rather than payloading it down."

Key added that Microsoft thinks it can reach 80% of end users worldwide by getting 10 to 15 major online content providers to adopt Silverlight. Thus far, the software vendor has announced deals with three: Major League Baseball, Netflix Inc. and CBS Corp.'s TV stations division.

"I think that everybody wants Silverlight to take off for the simple fact that a rising tide lifts all boats," said Noah Gedrich, director of engineering at Beverly Hills, Calif.-based Blitz Digital Studios LLC, which creates interactive advertisements. "If Silverlight becomes a serious alternative to Flash, it will force everyone to get better."

All that's needed for Silverlight to gain widespread adoption is a single "killer app," said Gedrich. As an example, he cited the rapid downloading of Adobe's Flash 8 player two years ago, after YouTube Inc. began using it to let Web users watch videos on its site.

Peter O'Kelly, an analyst at Burton Group in Midvale, Utah, said Microsoft's go-slow approach on Silverlight is reasonable. He pointed out that if the strategy doesn't work, the company can still accelerate the software's rollout by making it a part of upcoming service-pack updates for Windows Vista and Windows XP.

Silverlight was formally announced in mid-April. Microsoft released a Version 1.0 beta last week and said the finished product is due this summer. The plug-in, which promises DVD-quality video, isn't a large download. The size of the 1.0 beta for Windows users is only 1.1MB, and the company said a future 1.1 update will weigh in at 3.5MB.

Eyeblaster Inc., a vendor of digital marketing technology in New York, plans to support Silverlight in its products.

"If it took Adobe five to 10 years to get where they are today [with Flash], it will probably take Microsoft less time to get there," said Nir Shimoni, Eyeblaster's vice president of product planning. ▸

Microsoft's Web Design Mix

At Mix07, the software vendors said that:

A beta release of Silverlight 1.0 is available now with a go-live license for putting applications into production use.

Version 1.0 will ship in the summer as a plug-in for Internet Explorer, Firefox and Safari on Windows and Mac OS X systems.

An alpha release of Silverlight 1.1 with support for Microsoft's .Net framework can also be downloaded now.

Expression Studio, a companion set of development tools, is in manufacturing and will start shipping this month.

New Web Tool to Get .Net Shine in Second Release

LAS VEGAS

MICROSOFT kicked off the Mix07 conference last week by announcing that a full cross-platform version of its .Net programming environment will be fused to the second release of Silverlight.

Ray Ozzie, Microsoft's chief software architect, said during a keynote speech that Silverlight will become "a first-class .Net runtime environment" when Version 1.1 of the rich-media presentation technology ships. That will enable developers to juice their Silverlight applications with .Net code – even on non-Windows machines.

"The Web has been mostly about DHTML and AJAX," Ozzie said, referring to Dynamic HTML and Asynchronous JavaScript and XML. "But AJAX has limitations, and there are better languages than JavaScript for the sophisticated applications that developers want to build."

Microsoft is encouraging developers to create applications for Silverlight with either its new Expression Studio suite of Web design tools or Visual Studio, its flagship .Net-based development tool set. Last week, the company added Silverlight support to the alpha release of the next version of Visual Studio, code-named Orcas.

Microsoft also detailed a technology called Silverlight Streaming that can store video and other rich-media applications and stream them to users via Windows Live Platform, its Web services infrastructure.

Under a simplified set of licensing terms for Windows Live, developers can use up to 4GB of storage space for Silverlight applications at no cost. "With some reasonable limitations, it's on us," Ozzie said.

Peter O'Kelly, an analyst at Burton Group, said Microsoft's emerging Web design tools offering is finally building to a "crescendo." He added that the Mix07 announcements clarified what Ozzie has been up to since he was hired two years ago to help champion the company's adoption of a software-plus-services strategy.

Before now, Microsoft hasn't always kept up with what other vendors have been doing in the Web development market, said Bola Rotibi, an analyst at London-based Ovum Ltd. But she said Microsoft's rapid ramp-up of its Web design tools over the past 18 months shows that the company has recognized "there's no point in sticking your head in the sand about this."

Combining Microsoft's background in development tools like Visual Studio with newer rich-media technologies is the most logical strategy for the company as it tries to catch up to competitors in promoting the Web as an application platform, Rotibi added. "It's the path of least resistance," she said.

Bolstered by .Net, Silverlight will support 37 languages and run 300 to 1,000 times faster inside Web browsers than applications built using native JavaScript, according to Scott Guthrie, a general manager in Microsoft's developer division.

– ERIC LAI, WITH ELIZABETH MONTALBANO OF THE IDG NEWS SERVICE

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BRIEFS

Dell to Ship Systems Based on Ubuntu

Dell Inc. has confirmed that it will preinstall the Ubuntu distribution of the Linux operating system on some of its computers. Canonical Ltd., the commercial sponsor of the Ubuntu project, will certify the Dell models that are preinstalled with Ubuntu. Canonical will also provide support for the Linux distribution, which can be purchased from Dell's Web site. Dell said it will offer support for its Ubuntu-based hardware.

Google Responds to $1B Viacom Lawsuit

Google Inc. has rejected claims that it enables copyright infringement on its YouTube.com Web site. It's the company's first response to a $1 billion lawsuit filed against it in March by Viacom Inc. In documents filed in federal court, Google said the Digital Millennium Copyright Act, whose safe-harbor provisions relieve carriers and hosting providers from responsibility for copyright offenses as long as they remove the material in question, will be the cornerstone of its defense. (See The Grill on page 12.)

CSC to Purchase Covansys for $1.3B

Computer Sciences Corp. last week agreed to buy Covansys Corp., a technology consulting and services firm, for $1.3 billion. Covansys has a workforce of about 9,000 employees worldwide, including 6,400 in India, where CSC is looking to boost its business. Last year, Covansys reported sales of $455 million, up 21% from 2005.

Yahoo Agrees to Buy Rest of Right Media

Yahoo Inc. has agreed to become the sole owner of Right Media Inc. by buying the 80% of the online advertising exchange it doesn't own for $680 million in stock and cash. Yahoo had purchased a 20% stake last October for $45 million. Last month, Google agreed to buy Right Media rival DoubleClick Inc.

Boston Hotel Is Booking Thin Clients Into Rooms

The Seaport to use devices for Web access, VoIP calls

BY PATRICK THIBODEAU

JOHN BURKE, vice president of technology at the Seaport Hotel in Boston, is betting that he is at the forefront of an emerging trend in hospitality services: giving guests a reason to leave their laptops at home.

Internet access is now as expected in hotel rooms as soap and shampoo are. So to try to set itself apart from its rivals, the Seaport has decided to up the ante and outfit rooms with thin-client systems that have full Internet access.

Burke said the hotel has installed thin clients made by Igel Technology Inc. in 85 of its 426 rooms and plans to put them in all of its rooms over the next 12 months. The devices are integrated into 17-in. flat-panel monitors with touch-screen capabilities. They run an embedded version of Windows XP, support applications such as Adobe Acrobat and include a wireless keyboard.

Seaportal thin-client devices will provide guests at Boston's Seaport Hotel with information about services and access to the Web.

The Seaport isn't the first to try the thin-client approach. LodgeNet StayOnline Inc., an Atlanta-based company that offers interactive TV and broadband services in hotels, installed in-room thin clients at one national hotel chain's facilities in 2002. But Mark Henderson, the company's vice president of marketing, said the technology didn't hold up well under use by guests.

Henderson thinks most guests will still rely on laptops or, increasingly, cell phones and other handheld devices for Internet connectivity. He added that IPTV — television delivered over an IP network — could serve multiple purposes, such as letting guests use the TVs in their rooms as monitors for their laptops.

Bob O'Donnell, an analyst at IDC in Framingham, Mass., said the use of thin clients is an interesting way for a hotel to distinguish itself. But he believes that it will be a niche market, at least for now, and that the devices will primarily be confined to higher-end hotels such as the Seaport.

Standard TV sets have low screen resolutions for Web browsing, but that will change as hotels adopt IPTV and high-definition TVs, O'Donnell said.

Burke also predicted an eventual convergence of devices, with a single entertainment system providing television, computer and phone services to guests. But he said that there are immediate benefits to deploying the thin-client setup, called the Seaportal, in guest rooms.

For instance, the Seaport is using the thin clients to provide voice-over-IP service via its existing PBX system. That capability is supported by software from BlueNote Networks Inc. in Tewksbury, Mass.

Burke said a guest can make a telephone call by dialing the number on the thin client's monitor, which prompts the phone in the room to ring. When the guest picks up the handset, the call is completed.

There may be other payback opportunities as well, Burke said. The hotel will rely on the thin clients in lieu of publishing a guest services book, and it may use the devices to offer exhibitors at its convention center a way to keep conference attendees updated.

According to Igel Technology, which is based in Germany with U.S. headquarters in Fort Lauderdale, Fla., the thin clients list for $959 each. Burke said the systems will have low support costs because his staff will be able to remotely handle tasks such as clearing a device's memory after a guest checks out. ◆

IT Shrugs Off Criticism of Dual-Purpose RFID Label

BY MARC L. SONGINI

Checkpoint Systems Inc. last week rolled out a line of RFID-enabled labels with both advanced inventory control and item-tracking capabilities. The Thorofare, N.J.-based company said the dual-purpose label will help retailers consolidate their use of radio frequency identification technology.

Checkpoint said the new label, called Evolve, carries an industry-standard Generation 2 RFID tag for tracking inventory and a separate radio frequency circuit to enable in-store electronic article surveillance to catch shoplifters.

The inventory-tracking software in the Evolve RFID chip set can be used to manage stock levels and monitor inventory at the case and individual-item levels.

The new technology is already alarming some consumer advocates, who fear that the system could permit the surreptitious tracking of customers who mistakenly carry away the RFID chips with their purchases.

However, Howard Stockdale, CIO at Beaver Street Fisheries Inc., a Jacksonville, Fla.-based seafood supplier, downplayed the risk to consumers.

Stockdale, whose company uses Gen2 RFID technology to track cases and pallets, contended that the new system would need GPS capabilities to track customers after they leave retail stores.

"I appreciate the privacy concerns because I value them as well, but as it stands, this technology is purpose-built for supply chain tracking, not tracking people or their habits," Stockdale said.

Katherine Albrecht, an author and consumer privacy rights advocate, said in a statement that labels with RFID chips for both antitheft and tracking capabilities are very dangerous for consumers.

"Dual-use tracking devices will quietly be embedded in a person's belongings, where [vendors] will be able to silently and secretly transmit information about you to marketers, criminals and Big Brother," Albrecht said.

David Hogan, CIO of the National Retail Federation, a Washington-based retail industry association, said consumers concerned about privacy should use only cash to purchase goods. "I don't understand many of the concerns," he said, noting that tags can't be read from a far distance. "The laws of physics won't allow that," Hogan added.

Checkpoint CEO George Off said that his company supports industry guidelines for RFID, which dictate "that the consumer be made aware of the tags and be given choices on how they're handled." ◆

Restaurant Chain Beefs Up Payment Card Protections

Steak n Shake changes security menu to meet heightened PCI requirements

BY JAIKUMAR VIJAYAN

In the past, credit and debit card security wasn't a huge concern at The Steak n Shake Co., which operates more than 450 restaurants in the Midwest and Southeast. But it has been a top priority for the chain's IT organization since last August, when the number of card transactions that Steak n Shake processes annually passed the 6 million mark.

That put the Indianapolis-based chain into the category of businesses that are subject to the most stringent requirements of a data security standard mandated by the major credit card companies.

Moving into the Level 1 classification under the Payment Card Industry (PCI) Data Security Standard had big IT implications for Steak n Shake, said Sean Smith, its director of strategic technology services. The company had been accepting card payments for only about two and a half years, and before August, it was considered a Level 4 merchant — the lowest tier on the PCI scale.

Requirements Multiplied

"We went from ground zero to Tier 1 in a very short period of time," Smith said. "Our PCI requirements and the difficulty of attaining them changed by a magnitude of sixfold to tenfold."

PCI requires all entities that handle payment cards to implement a set of 12 security controls, including data encryption, logical and physical access controls, and activity monitoring and logging. Companies are classified into four groups, depending on the number of card transactions they process annually. Businesses that are in the top group like Steak n Shake are required to undergo quarterly network security scans and an annual on-site security audit.

Some of the biggest changes at Steak n Shake had to be made at the restaurant level. For instance, the generic usernames and passwords used in the past to access point-of-sale systems were replaced by a log-in system based on Active Directory that can be centrally monitored and managed. Under PCI, Smith said, "we need to know who is accessing what, when and where."

The company also had to roll out tools for centrally managing the IT assets in its restaurants and pushing out software patches and antivirus updates to the systems. In addition, Smith said, Steak n Shake can now log and audit all restaurant-level transactions involving payment card data, as required by PCI.

In another facet of the compliance effort, Steak n Shake is replacing its VSAT satellite communications links with a T1 network that will tie each restaurant to headquarters via secure point-to-point virtual private network connections. And to better secure its network perimeter, the chain is adding intrusion-prevention and -detection tools, plus security event management technology with centralized logging and correlation.

Smith declined to disclose what the security upgrades are costing Steak n Shake, which has hired Qualys Inc. to do the required quarterly vulnerability scans of its network perimeter. Qualys will also conduct similar assessments of its internal network to help mitigate potential security threats from insiders.

Implementing and demonstrating the controls needed to comply with PCI at Level 1 can be challenging, said Terry Ramos, director of strategic development at Redwood Shores, Calif.-based Qualys. That's especially true for a company like Steak n Shake, whose compliance level has abruptly changed, Ramos said. He noted that at Level 4, the PCI mandates are little more than best practices, with no specified validation requirements.

Steak'n Shake
6552

The new card payment security measures at Steak n Shake include a centrally managed username and password system for restaurant employees.

Getting reclassified on the PCI scale "can often be a rude awakening for organizations," said Chris Noell, president of TruComply, an Austin-based consulting firm that focuses on the payment card industry. Level 4 companies, he added, "are rarely aware of their compliance obligation, much less doing anything about it."

"The difference can be like night and day," agreed Gartner Inc. analyst Avivah Litan. "Level 1's come under a much bigger magnifying glass." ◆

CTO: Sun on Open-source Schedule for Java

BY HEATHER HAVENSTEIN

Bob Brewin, software chief technology officer at Sun Microsystems Inc., said the company will discuss the state of its Java open-source efforts and host the first CommunityOne day for open-source and Web developers at the JavaOne conference in San Francisco this week. In an interview with Computerworld *last week, Brewin said the company is on track to make all Java products available by June under the same General Public License (GPL) that Linux carries.*

The theme of JavaOne this year is "Open Possibilities." Does that mean Sun plans to announce that Solaris will be available under the GPL? We haven't decided what we are going to do about that. JavaOne is the wrong place to do that. We're keeping a really close eye on the upcoming GPL 3. It is one of the things that will gate our decision. That is due out in July. We want to see how that will play out, and then we will make our decision.

If Sun indeed decides to provide Solaris under the GPL, how will the company overcome public internal disagreements – specifically, the recent public disclosure by the company's open-source officer, Simon Phipps, that developers won't welcome the move? It is not entirely clear whether developers will welcome the news. It comes down to what the community wants to do. It will be up to them. GPL historically has had some taint to it. Right now, we'll have to see how that plays out.

Can you give an update on the company's efforts to release all the source code for Java under the GPL by next month? We're going to meet our commitment. Last year, we said we would be able to open-source the entire platform by the time we hit this point, and that is what we're going to do.

Have fears that open-sourcing Java would cause its code to be forked into incompatible versions come true? There is always the chance [of forking]. We haven't seen any particular cases where that sort of forking has occurred. The [open-source] Java implementation is good, and people are leveraging that and building on top of it.

Have there been any particularly interesting modifications made by developers so far? Not at this time. This is still fairly new. People are really anticipating not just the pieces of what we have released so far but the entire platform. We won't see any huge wave until after that occurs. I suspect that the most interesting sort of case for that will be what will happen on the Linux platform, which is one of the reasons why GPL is such a prudent choice [for Java]. With a platform with a compatible license to that of Linux, the effect it [has] on the Linux community is a proof point.

What will be the focus of CommunityOne, and why was it added to the JavaOne schedule? The development community is larger than just Java. There is significant effort [at Sun] around participating more in communities and building open-source offerings. [We thought] creating a day that wasn't specifically tied to Java but allows for active participation and interest in other topics would be a good idea. It has actually been remarkably popular. We have more than 2,000 people signed up. More than 50% of the topics are from people outside of Sun. The topics include languages, Web 2.0, OpenSolaris and Linux.

What is Sun's response to the Justice Department joining a whistleblower lawsuit that charges Sun and other vendors with submitting false claims to U.S. government agencies for government IT contracts and with receiving kickbacks stemming from these contracts? I can't comment on that. ◆

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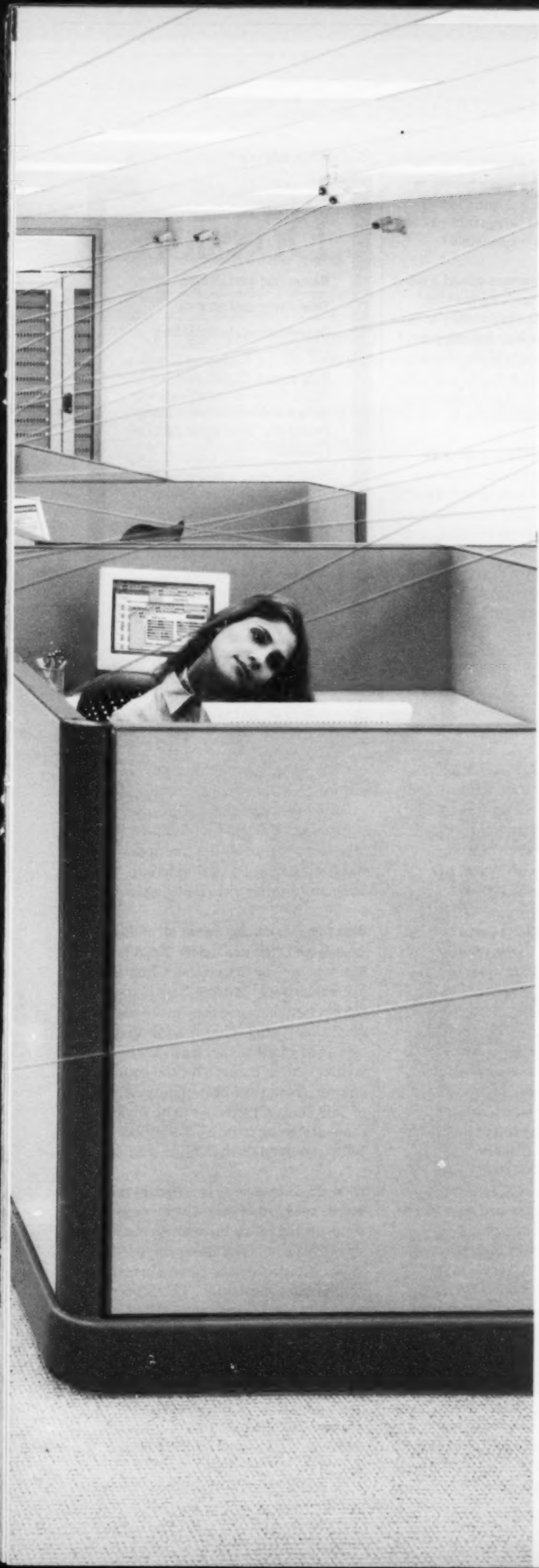


_INFRASTRUCTURE LOG

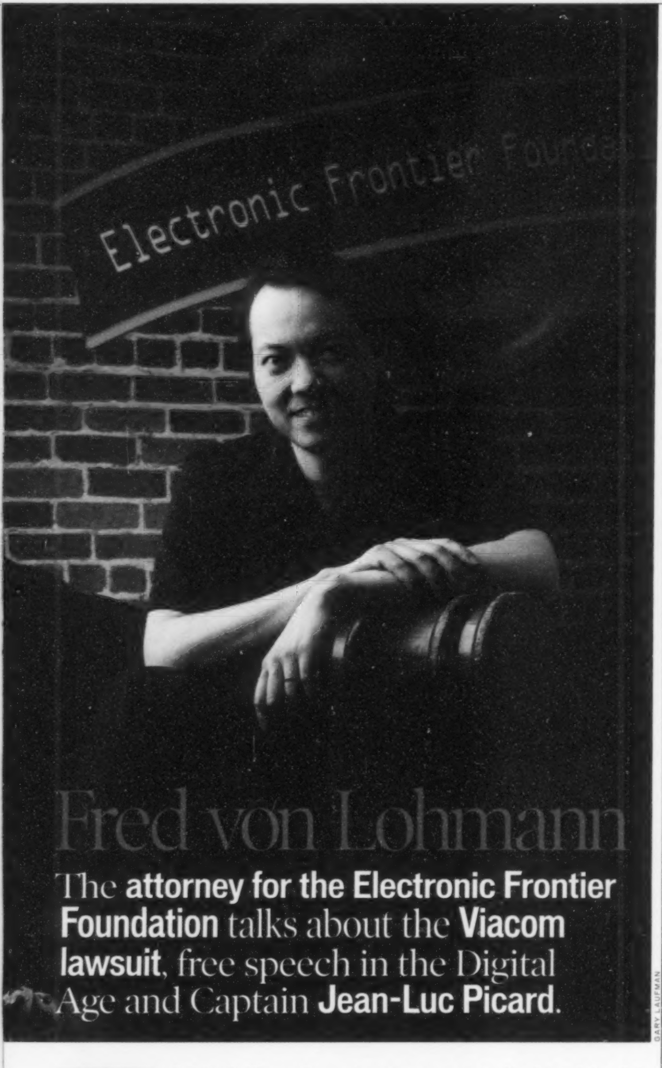
_DAY 25: Our ad hoc security solutions are out of control. We're not prepared for new threats. We're always playing catch-up. We're leaving ourselves vulnerable and exposed.

_Gil's had a security epiphany: high-powered lasers. They're everywhere. I keep zapping myself as I type.

_DAY 26: I'm taking back control with an end-to-end security solution from IBM. Their security service experts can come in and help us assess our security needs. IBM Tivoli® helps us monitor and respond to threats while managing access to our critical information. And the IBM System z™ mainframe's encryption and multilevel security features are legendary.

_That's great. But it won't bring back my left sideburn.

IBM.COM/**TAKEBACKCONTROL**/SECURITY



GARY LAUFMAN

Fred von Lohmann

The **attorney for the Electronic Frontier Foundation** talks about the **Viacom lawsuit**, free speech in the Digital Age and Captain **Jean-Luc Picard**.

THE GRILL

In March, Viacom International Inc. filed a $1 billion-plus lawsuit against YouTube Inc. parent Google Inc., claiming that YouTube infringed Viacom copyrights by streaming more than 1.5 billion clips of TV shows such as The Colbert Report *and* SpongeBob SquarePants.

The outcome will help determine whether Web-hosting sites are protected under the so-called Safe Harbor provisions of the U.S. Digital Millennium Copyright Act (DMCA). The case will also likely have a major bearing on how copyrights, patents and intellectual property are treated in the evolving digital landscape.

Does the Viacom case boil down to whether YouTube is protected under the Safe Harbor provisions of DMCA? Legally speaking, that is the heart of the case. If Google and YouTube are covered by Safe Harbor, the case is over. That's the main event.

So it's OK for YouTube to allow infringing material to be uploaded to its site and to make money off it? Basically, the DMCA Safe Harbor provisions are specifically intended to let intermediaries off the hook so long as the intermediary is willing to remove the material when notified. It's not really a question of whether they should be permitted but should they be held responsible.

What about when customers upload a video back onto the site? That's something YouTube has very limited ability to do anything about. The key is, one, you need to terminate users if you discover it's the same guy doing it over and over again. Two, you need to take anything infringing down when notified.

Shouldn't copyright holders such as TV networks receive royalties for use of materials they developed on their own dime? Yes, certainly. The good news for them is that the DMCA has given them more power to take things offline. With DMCA, you don't have to go to court, you don't have to prove your case; you just have to take things offline when notified.

The other piece of good news is that other service providers like YouTube are eager to cut deals to get content owners paid for new uses that might not be covered by DMCA.

What's a good example? The deal CBS signed with YouTube [in March], and record company deals with YouTube where copyrighters have authorized usage on YouTube [such as a music video streaming deal with Warner Brothers Music in September 2006].

Are current copyright laws passé? Copyright law is always in the process of being overhauled. That's just the nature of copyright and technology and an effort to accommodate the two. But Safe Harbor, as it has been applied by courts up until now, doesn't need to be changed. The reason we have companies like Google and YouTube and eBay is that Safe Harbor was written by Congress in 1998 to protect investors and build those businesses.

I think that part of DMCA Safe Harbor is working out well. I don't think Safe Harbor has addressed freedom of speech effectively enough.

We sued Viacom [in March] for taking down content. MoveOn.org Civic Action and Brave New Films, a documentary film company, worked on a short video that was a tongue-in-cheek parody that used a number of clips from *The Colbert Report*. It was removed from YouTube due to a takedown order through Viacom. We sued in response, and Viacom has since confirmed that it was a mistake, withdrew their takedown and put the video back up. We're in discussions with [Viacom] to make sure that dolphins don't get caught in their big DMCA fishing net.

[The EFF subsequently dropped this suit, citing "Viacom's willingness to take steps to protect the free speech rights of those who post videos to YouTube and similar video sharing sites."]

Does Google's making money off of this mean it isn't "fair use" under DMCA then? Many people have said that Google and YouTube should not lose Safe Harbor [protection] because they make money from advertising. There's some question as to whether that financial benefit is direct enough; that's for the courts to answer. If lawyers' best understanding of Safe Harbor turns out to be wrong, there are going to be a lot of Silicon Valley companies that are in trouble.

What are some aspects of copyright law that do need to be fixed? The current law supports digital rights management, and that's a mistake. It has imposed huge costs on fair use and on interoperability and competition. That's been a complete loser that Congress hatched in the mid-'90s. We'd all be better off if they pulled up that weed now.

Congress is also grappling with how to make digital music licensing more efficient. Outfits like iTunes will tell you that the business of licensing music is still incredibly difficult and uncertain.

– INTERVIEW BY THOMAS HOFFMAN

Dossier

Name: Fred von Lohmann

Title: Senior staff attorney

Organization: Electronic Frontier Foundation

Role model: Captain Jean-Luc Picard. Before asking yourself what you would do in a certain situation, I would ask, "What would Jean-Luc Picard do?"

Favorite vice: Video games. My wife has officially banned video games from our home. My favorite is Halo – the one Microsoft product I can't resist.

Ask him to do anything but... be up at 7 a.m.

Favorite recent movie: *Children of Men*. **All time:** *The Piano*.

Most interesting thing most people don't know about him: I used to work for Condi Rice.

IBM.

_INFRASTRUCTURE LOG

_DAY 44: This lack of productivity is out of control. What we're using isn't working. Gil's had enough. He moved everyone into one cubicle. A "collaboration" cubicle. We need a better idea.

_DAY 46: I'm going with IBM Lotus® Notes® and Domino®. It's more than e-mail; it's an open platform designed for collaboration. It has proven security features and productivity enhancers like document sharing and custom app development. And it's flexible enough to integrate across multiple platforms, including J2EE™ and Linux®.

_OK, who sat on my lunch?

Lotus.

Download the Lotus Notes & Domino demo at:
IBM.COM/**TAKEBACKCONTROL**/COLLABORATION

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BRIEFS

Tibco to Purchase BI Vendor for $195M

Tibco Software Inc. plans to acquire business intelligence software vendor Spotfire Inc. for about $195 million. Tibco said it expects to combine its real-time infrastructure software with Spotfire's enterprise analytics system to offer a quick way to access and analyze data and processes. Spotfire employs 200 people and claims to have about 800 customers. The deal is expected to close in the third quarter.

BEA Blends Its Java Tool Sets

BEA Systems Inc. has introduced a set of development products that melds its open-source and commercial Java tools. The new offering, called Workshop 10.1, combines BEA's Workshop for WebLogic commercial tools and Workshop Studio, an Eclipse-based open-source product BEA gained in its September 2005 acquisition of M7 Corp. The Workshop 10.1 tool set will be available this summer.

Reuters Acquires Content Aggregator

In a $25 million deal, Reuters Group PLC acquired ClearForest Corp., an Israeli start-up that makes technology designed to analyze, read and understand large amounts of content from diverse documents. ClearForest has been struggling and laid off 10 people earlier this year. Reuters is a ClearForest client.

Radware to Buy Covelight for $16M

Radware Ltd. has agreed to acquire Covelight Systems Inc. for $16 million in cash. Radware said it plans to add Covelight's flagship product, Inflight, to its APSolute line of application-delivery tools. Inflight captures detailed business events from Web transactions. Radware said that Covelight executives will join its management team and that no layoffs are expected as a result of the acquisition.

[ON THE MARK

HOT TECHNOLOGY TRENDS, NEW PRODUCT NEWS AND INDUSTRY BUZZ BY MARK HALL]

The LAN IP scan found JXTA underlying XML P2P exchanges...
GEEK SPEAK
SOMEONE SHOULD TELL THAT FELLOW THAT ENGLISH IS THE LANGUAGE of BUSINESS.
INDEED.

MATTHEW FAULKNER

Businesses Speak English, but . . .

. . . the new global workforce is far from fluent. Last year, India's National Association of Software and Service Companies reported that among the 400,000 engineers who would graduate in that country in 2007, 80% to 90% wouldn't qualify to work for a global company because they lack the proper business skills, primarily fluency in English. Deepak Desai, CEO of GlobalEnglish Corp. in Brisbane, Calif., describes India's massive pool of engineers as having "fluent to flawed" English. The situation is worse in China, Vietnam, Eastern European countries and other nations that have ambitions to match India in offshoring but lack its English-language tradition. Training non-native speakers is tough. For a 25-year-old, it's "10 times more difficult" to learn a new language than it is to learn calculus, says Desai. India's response to the problem has been to boost the number of English teachers. While that's laudable, Desai says, teachers are "not consistent, not scalable" and not available 24/7. However on-demand software — like GlobalEnglish's eponymous offering — is all those things, he observes. Localized in 13 languages, GlobalEnglish trains speakers in the business environment in which they work, says Padmashree Koneti, director of product management. For example, she says, GlobalEnglish has templates designed for IT workers, and corporate users can add their own company- or technology-specific vocabulary. Desai says that later this year, the company will introduce non-American accents and add cultural contexts for business situations. Pricing starts at $250 per user per year.

DESAI: Global companies need a global language: English.

Converged communications . . .

. . . mean you'll outsource more services. Russ Maney, vice president of marketing at Smoothstone IP Communications Inc. in Louisville, Ky., thinks your on-premises communications gear is fast becoming a quaint relic of the last century. "All communications is going to the converged IP model," he says. Therefore, you'll soon be viewing voice and data operations much as you increasingly do software — as something that can be served to users over the Internet. Maney dubs this shift CaaS, or communications as a service. He claims that Smoothstone's engineers can design a custom CaaS network for your company using proprietary technology that applies "best-of-breed tools" to its distributed system. Today, Smoothstone offers e-mail, fax-to-the-desktop, voice, webinar, and audio- and videoconferencing services. Later this year, it hopes to introduce network management services. Beyond that, Maney says the company plans to build presence-style applications for cell phone users. Pricing depends on the implementation.

MANEY: CaaS is the trend of the future.

Security is coming . . .

. . . to your network switch. By 2009, all switches will come standard with security features, predicts Tom Barsi, CEO of ConSentry Networks Inc. in Milpitas, Calif. You can get a head start by investing in his company's 48-port LANShield Switch. It sports three custom processors that inspect all incoming packets for policy violations and stop them before they hit your network. It uses standard anti-malware software from Symantec, McAfee and others and works with your existing network directories to determine user access rights. In Q3, ConSentry plans to ship a 24-port LANShield Switch for around $7,000. Barsi wonders why anyone would buy a plain vanilla switch when they could get a secure one for the same price. Why, indeed?

BlackBerry users get cheap . . .

. . . international calling. As if it weren't already hard enough to pry BlackBerry devices from users' hands, this week MINO Wireless USA Inc. in Sunnyvale, Calif., will debut a service that will let corporate chatterboxes use the popular gadgets to make international calls for as little as 3.3 cents per minute. CEO Jing Liu says the company passes U.S.-originated calls through its VoIP service and connects them to phones abroad. You merely push an applet to your users' BlackBerries that they then use to call outside the country. Your company gets billed for pooled minutes of all accounts, though you get reports on each blabbermouth.

The BlackBerry is going global.

Deploy private PC portals . . .

. . . for mobile users. Occasionally, road warriors may tell you that they'd like to access content on their PCs while they're out of the office. One way to deliver it to them is via DoMo, a combination software and service from GoWare Inc. in Gilbert, Ariz. According to Jason Thibeault, the company's chief technology officer, the DoMo PC client creates static pages of chosen content and pushes them to its attendant online service. Mobile workers dial in to the service, authenticate themselves and then access the information formatted for their devices. The software is available for Windows now, and Thibeault expects a Mac client to be ready in Q3. He says you can also deploy DoMo mobile portals behind a corporate firewall. The software is currently in public beta at *www.goware.biz*. ▸

Innovations by **InterSystems**

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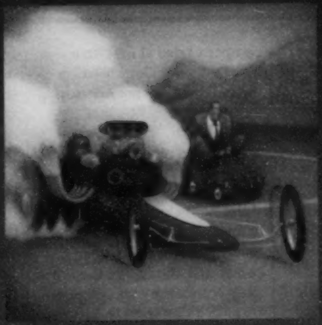

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ESB, SOA Keys in Airline Migration Project

Mainframe apps to be replaced by vertical packages

BY HEATHER HAVENSTEIN

Scandinavian Airlines International (SAS) this month will begin testing new integration technology that it expects will be the centerpiece of an effort to replace more than a dozen homegrown mainframe applications with three commercial software packages.

The Stockholm-based airline plans to use Tibco Software Inc.'s enterprise service bus (ESB) and BusinessWorks integration software as a backbone for moving messages to and from internal and external systems in real time, said Jonas Berggren, vice president of production systems at the airline's parent company, SAS Group.

"The challenge that we have is establishing communications through services rather than a central messaging solution," he said. "We're using Tibco partly to provide a messaging backbone for migration and integration, but also to provide us with a loosely coupled [service-oriented architecture]."

The messaging backbone will let the company map data from disparate systems, route messages, ensure that services are delivered in the correct order and enforce security rules, Berggren said.

Enabling Change

Every time a plane takes off or lands, a message is sent to multiple systems, including internal, partner and supplier systems, Berggren noted. Those messages will flow through the ESB and automatically update all of the systems; the current system performs batch updates.

Scandinavian Airlines expects the move to an SOA and ESB to help it react more quickly when it experiences weather delays or needs to make repairs.

The move to an SOA and an ESB for the migration project will help the airline — which operates 1,000 flights per day with 300 airplanes — react more quickly to multiple unexpected events like weather delays and equipment repairs, Berggren added.

SAS plans to have the first portion of the project in production by September, according to Berggren. The project is slated for completion in March 2008.

Berggren estimated that the airline will save three to six months on the migration project by using the Tibco software rather than building the messaging backbone on its own. The project is expected to lower IT maintenance costs by $250,000 per month.

Berggren declined to provide specifics on further cost savings.

The main challenges to the project involve shepherding users through the transition from existing systems to the new ones, Berggren said.

"They are moving from homegrown mainframe applications that they have been using for 10 to 15 years," he said. "They have to change the way they work and adapt to a new system."

To combat the cultural challenges, SAS has established Tibco user groups and individual champions for the project in different parts of the company, Berggren said.

Jason Bloomberg, an analyst at ZapThink LLC, said that Tibco's software "does the job and scales quite well," which is why SAS and other airlines, such as Delta Air Lines Inc., are using it for SOA projects.

But, he added, integration middleware such as Tibco's must also be supplemented by metadata management and governance tools and policies for successful SOA initiatives. ▸

Continued from page 1

Digg

said the online street fight tested "the validity and integrity of a social community." Digg saved itself from failing the test when it decided to return control to its users, added Lynch, who writes regularly about Web 2.0 issues.

"If you're going to turn [the site] over to the community, you can't decide to change your mind without having serious implications," Lynch said. "User-generated content means that users will make a collective decision about what is and isn't appropriate."

But Barry Parr, an analyst at JupiterResearch in New York, said media companies and Web publishing organizations — including Web 2.0 businesses such as Digg — have to openly acknowledge that editing in moderation may be necessary when dealing with user-created content.

"There are lots of people in the world, and not all of them are people of goodwill," Parr said. "[Digg] doesn't seem to understand that there is a middle ground between a tightly edited product . . . and a riot."

Michael Arrington, the editor of a blog called TechCrunch, said in a post that it was "an understatement" to call the response by Digg users a revolt. "The users had taken control of the site," Arrington wrote. "And unless Digg went into wholesale deletion mode and suspended a large portion of their users, there was absolutely nothing they could do about it."

The San Francisco-based company tried at first. In a blog entry last Tuesday afternoon, Digg CEO Jay Adelson said that removing posts containing the decryption key was a necessity. "In order for Digg to survive, it must abide by the law," he wrote.

But hours later, Rose said in another blog post that after reading thousands of user comments, the will of the Web site's community was clear. He added that Digg would stop the deletions and "deal with whatever the consequences will be."

The key at the center of the controversy is a 128-bit integer with 32 digits that unlocks the content on HD-DVD and Blu-ray discs, nullifying encryption technology called the Advanced Access Content System. AACS was developed by a consortium that includes IBM, Intel Corp. and Microsoft Corp., as well as disc makers and movie companies.

The decryption key leaked onto the Internet in February, and the AACS consortium has been trying to bottle it back up. Digg initially wouldn't identify the source of the cease-and-desist request but later confirmed that it came from an attorney for the consortium.

In an interview, Adelson said Digg responded as it does to every such request — by taking down the posts in question. "It was a little bit difficult for us, because frankly we are aligned with the users" on the copyright issue, he said.

Adelson said he wasn't surprised that the deletions of the posts containing the key triggered a pushback from Digg.com users. But, he added, he didn't expect the continual-posting tactics that the users employed to get their message across. It proved to be an effective approach, Adelson acknowledged. "They were saying, 'We are the community that you built. You have given us this power, and you can't take it away on this issue.' We listened," he said.

That doesn't mean anything goes on the site, according to Adelson. "We still enforce the terms of use," he said. "And if anybody violates our terms of use — if pornography or anything goes up there that is not supposed to be up there — we still will be removing things."

But Rod Carveth, an associate professor in the communication arts department at Marywood University in Scranton, Pa., questioned whether anyone can moderate or edit Web sites such as Digg.com. "Communities that develop on sites such as Digg, Slashdot and others form their own social norms," Carveth said. "And when they feel they are violated, they use their own sanctions, site administrators be damned." ▸

BEFORE & AFTER

> Whether you agree or disagree with the policies of the intellectual property holders and consortiums, in order for Digg to survive, it must abide by the law.
>
> FROM A BLOG POST WRITTEN BY DIGG CEO JAY ADELSON, EXPLAINING THE COMPANY'S DECISION TO REMOVE POSTS WITH THE AACS DECRYPTION KEY FROM ITS SITE

> You've made it clear. You'd rather see Digg go down fighting than bow down to a bigger company. If we lose, then what the hell, at least we died trying.
>
> FROM A SUBSEQUENT BLOG POST WRITTEN BY KEVIN ROSE, DIGG FOUNDER AND CHIEF ARCHITECT, ANNOUNCING THAT THE REMOVAL OF THE POSTS WAS BEING HALTED

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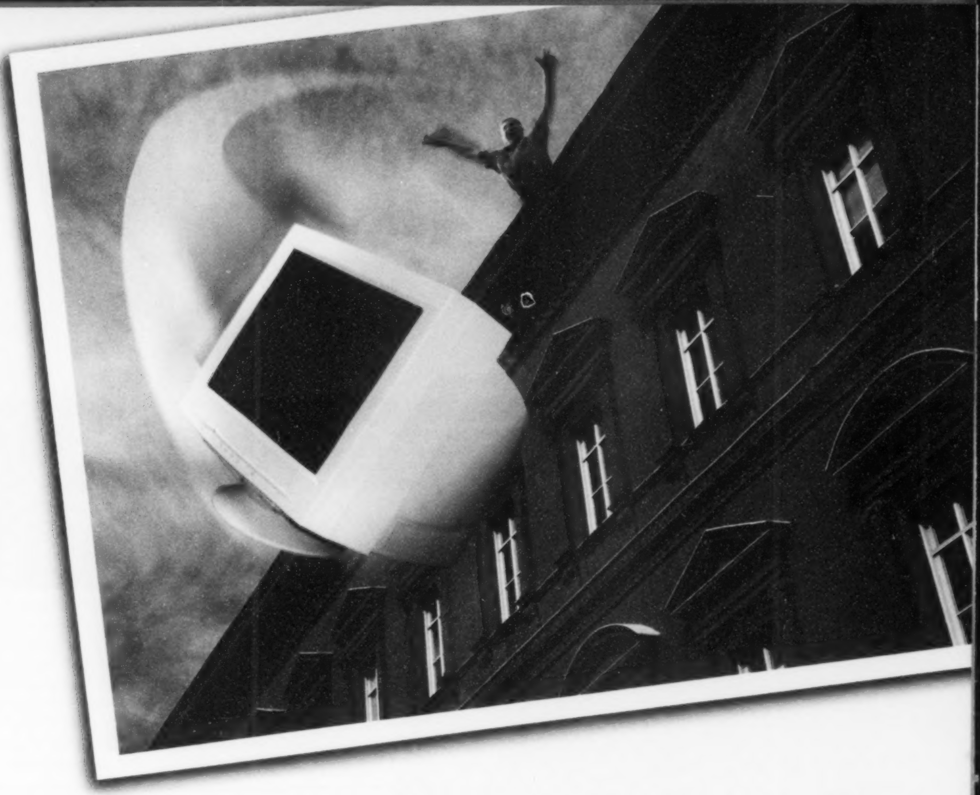

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COMPUTERWORLD

SHARK BAIT

Cast your tech tidbits into the feeding frenzy

Cisco Gives IT More Control Over Networks

BY MATT HAMBLEN

Cisco Systems Inc. last week upgraded the lower-end model of the two hardware "brains" sold with its Catalyst 6500 switches, adding new technology designed to give network managers greater control over applications and increased security capabilities.

The new version of Cisco's Supervisor Engine 32 module includes integrated technology called the Programmable Intelligent Services Accelerator. PISA can help IT staffers gain more visibility into systems so they can give bandwidth priority to critical applications or ones with high quality-of-service needs, such as voice-over-IP systems, said John Yen, senior manager of network systems at Cisco. Staffers will also be able to block end users from launching Internet radio or other unauthorized applications, according to Yen.

In addition, he said, the PISA technology supports deep packet inspection for protecting networks against viruses, worms and other security threats.

Hardware Advantage

Cisco user PDL BioPharma Inc. is evaluating the PISA-equipped Supervisor Engine 32 for likely deployment early next year at a new headquarters in Redwood City, Calif., said Luis Chanu, global network and security architect at the pharmaceutical company.

"PISA looks really good, since it does deep packet inspection and marks traffic at the edge of the network," said Chanu, based on seeing the technology in action at a Cisco lab. "Doing that in hardware is a big plus, since doing it in software could slow down the switch."

In addition, software-based application intelligence does not let users specify which of their applications are the highest priority, Chanu said.

PISA should help IT staffers "deal with the unpredictable traffic flows," said Zeus Kerravala, an analyst at Yankee Group Research Inc. in Boston.

"There are other vendors that talk about adding intelligence to the network, but most are application- or security-oriented. Cisco does both."

Nick Lippis, an analyst for "The Lippis Report" in Hingham, Mass., said the PISA technology is the first to put the application control and packet-inspection functions in access switches at the edge of networks. Lippis added that with PISA, Cisco can offload functions from firewalls and intrusion-prevention systems.

The new supervisor engine will be sold in two versions; both will be available in June for $28,000 each. One module has eight Gigabit Ethernet uplinks, while the other includes a pair of 10 Gigabit Ethernet uplinks. ◆

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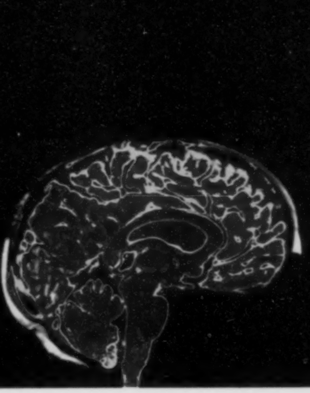

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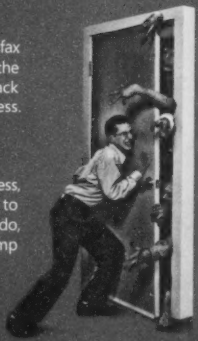
Microsoft

stopping zombies. easy.

1. Run (or walk really fast) away.
Zombies don't walk as much as shuffle, which means pretty much anyone can outrun a Zombie. It's not a long-term solution, but it will make their initial attack easier to handle.

2. Man the barricades; hold all calls.
Push all your copiers, file cabinets, computers, fax machines, cubicles, tables, and chairs against the doors. Post sentries, light torches, and get back to the real work at hand—running a business.



3. Pray for daylight.
Zombies usually attack under cover of darkness, and tend to shun the light. You won't want to get caught at work after sundown; but if you do, keep a torch burning (even a bright desk lamp might do).

4. Find a weapon, any weapon.
No one likes to be poked, Zombies included, and by wielding a lamp, or a stapler, even a pot of coffee, you can repel them effectively. It won't kill the Zombies, of course (they're undead), but it may daze them enough for you to hustle away to safety.

5. Retreat to your well-stocked mountain lair.
Many large enterprises maintain heavily fortified bunkers in remote locations, just in case Zombies (or Ninjas) attack. Does your company have one? Will vegetarian meals be available? Ask your supervisor.

stopping malware. easier.

1. Implement Microsoft Forefront.
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GLOBALDISPATCHES An International IT News Digest

TruEnergy, IBM Sign Outsourcing Deal

MELBOURNE, AUSTRALIA

TRUENERGY LAST week signed a 10-year outsourcing deal with IBM Australia Ltd. The energy company, which is based here, said the deal would likely lead to the layoff of up to 200 IT workers.

Under the agreement, St. Leonards-based IBM Australia will assume responsibility for running TruEnergy's customer registration, billing, credit and collections systems, as well as application development, technical support and infrastructure maintenance.

IBM said that client service and product delivery will be handled in its Australian office, while certain back-office functions will be managed from IBM Daksh in Bangalore, India.

TruEnergy Managing Director Richard McIndoe said that IBM will be developing systems that are compatible with the government of the state of Victoria's new advanced interval meters, which enable customers to monitor their electricity use.

McIndoe said the 200 workers likely to be laid off are eligible to apply for 30 new positions in the company's retail operations. Others may be hired by the outsourcer, he noted.

■ SANDRA ROSSI,
COMPUTERWORLD AUSTRALIA

U.K.'s House of Lords Probes Privacy Issues

LONDON

THE BRITISH House of Lords Constitution Committee has launched an inquiry into the government's surveillance and data collection techniques.

Last month, the committee began a study of how an increased focus on surveillance and data collection affects the privacy of individuals and their relationship with the government.

The inquiry comes as the U.K. government is pushing for increased data sharing among public-sector agencies through programs such as a national identification card system.

The committee will determine what forms of surveillance or data collection are constitutional and whether the 1998 Data Protection Act offers sufficient protection for U.K. citizens.

"The nature and extent of surveillance and data collection have changed dramatically in recent years," said Lord Richard Holme of Cheltenham, chairman of the committee. "The broad constitutional implications of these changes have not thus far been sufficiently closely scrutinized."

■ TASH SHIFRIN, COMPUTERWORLD U.K.

Singapore to Issue $1.5B in IT Contracts

SINGAPORE

SINGAPORE'S GOVERNMENT expects to award IT contracts worth up to $2.23 billion Singapore ($1.5 billion U.S.) during the fiscal year that began April 1, as part of an effort to expand the public sector's use of technology.

The Infocomm Development Authority of Singapore said late last month that the largest contract up for tender is for the Standard Operating Environment project, which is worth about $1.5 billion Singapore ($987 million U.S.) over eight years. The project's goal is to standardize the desktop, messaging and networking products used by Singapore government agencies.

In addition, the government will offer more than 340 contracts worth an estimated $730 million Singapore ($480 million U.S.).

Those projects include building the Integrated Enterprise Information System for National Service Management for the Ministry of Defense; the Future Responder and Immigration Facial Screening Systems for the Ministry of Home Affairs; and the Title Automated Registration System for the Singapore Land Authority.

■ SUMNER LEMON, IDG NEWS SERVICE

Satyam Adds Sydney Development Center

SYDNEY

INDIAN OUTSOURCER Satyam Computer Services Ltd. has added to its Australian operations by opening a 150-seat development center in North Sydney.

Deepak Nangia, Australia and New Zealand country manager for Hyderabad-based Satyam, said that with the new facility, the company now employs 250 developers in Sydney and 450 in Melbourne. The 700 developers in Australia are the most Satyam has in any country outside of India.

The new office, which Nangia called a "regional solutions hub," specializes in process design, software architecture and application development.

"The DNA of this office will be solution architects, modelers and integration experts," Nangia said. "Sydney has the capability to cater to this skill set, and it has the ability to look beyond development."

Satyam's Asia-Pacific senior vice president, Virender Aggarwal, said the company's business is growing well in Australia.

"Our focus is to become a local, Australian company," he said, "and we are hiring local staff and graduates."

■ RODNEY GEDDA,
COMPUTERWORLD AUSTRALIA

IT Staffing Problems Ease in Great Britain

LONDON

A SHORTAGE OF IT expertise that has plagued U.K. businesses in recent years appears to be easing, according to research conducted by E-Skills UK, a London-based training agency.

In its latest quarterly bulletin, the nonprofit, corporate-funded agency said a survey of corporate recruiters throughout the U.K. found that just 6% of firms recruiting IT staff during the third quarter of 2006 experienced widespread skills shortages.

E-Skills said the result represented the lowest percentage of respondents encountering skills shortages in more than two years, even though demand for IT skills is increasing.

GLOBAL FACT

8.39M

Projected number of WiMax users in China in 2011, two years after the technology is expected to become widely available in that country.

SOURCE: YANKEE GROUP RESEARCH INC., BOSTON

The survey did reveal that employers remain concerned about a lack of nontechnical skills among candidates for IT vacancies. About one-third of the IT recruiters said the level of business and interpersonal skills of candidates was "below that required by their business."

In addition, the survey found that there were still shortages of IT workers in specific categories, including senior systems developers and senior programmers.

■ TASH SHIFRIN, COMPUTERWORLD U.K.

Compiled by Mike Bucken.

Briefly Noted

AOL LLC **has launched a Web portal in India that combines services like instant messaging and e-mail with local content from India's film industry and other sources. The AOL offering will compete with portals already established in India by Yahoo Inc., Microsoft Corp. and others. AOL opened its first Indian operation, a customer service center in Bangalore, in 2002.**

■ JOHN RIBEIRO, IDG NEWS SERVICE

Hynix Semiconductor Inc. **announced late last month that it has broken ground on a 3.8 trillion won ($4.1 billion U.S.) chip factory in Chongju, South Korea. Hynix, based in Ichon, South Korea, plans to produce NAND flash memory chips, which are mainly used in digital music players and flash memory cards, at the new facility. The plant is expected to open next year.**

■ DAN NYSTEDT, IDG NEWS SERVICE

CA Inc. **has signed up outsourcing vendor Achievo Corp. to support its Chinese customers. Under terms of the agreement, San Ramon, Calif.-based Achievo will provide implementation, customization and maintenance services for CA software used in China. Terms of the deal were not disclosed.**

■ SUMNER LEMON,
IDG NEWS SERVICE

Telefónica SA **in Madrid has agreed to acquire a 10% stake in Rome-based Telecom Italia SpA for €2.3 billion ($3.1 billion U.S.). The deal ends months of speculation about the future of the Italian telecommunications firm, which has attracted a number of suitors, including AT&T Inc. and América Móvil SA in Anáhuac, Mexico.**

■ JOHN BLAU, IDG NEWS SERVICE

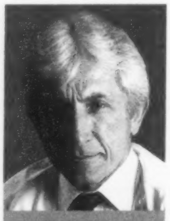
Several U.K.-based and international firms **last week launched a consortium whose goal is to create programs to reduce the environmental impact of IT systems in England. The Green Technology Initiative, whose founders include Cisco Systems Inc., Saatchi & Saatchi Interactive, EDF Energy PLC and Global Crossing Ltd., aims to show companies how to use existing technology to reduce energy use and carbon dioxide emissions from IT equipment.**

■ TASH SHIFRIN,
COMPUTERWORLD U.K.

DON TENNANT

Superiority Complex

THE SHANGHAI NO. 2 Machine Tool Works Factory, located on a nondescript street in the heart of the sprawling East China city for which it is named, stands as an austere testimony to the Chinese government's emphasis on strength through manufacturing. Gray, stark and forbidding, the exterior of the state-owned factory complex would make a fitting backdrop for a documentary on Chairman Mao's Great Leap Forward.



DON TENNANT is editor in chief of *Computerworld*. Contact him at **don_tennant@computerworld.com**.

Yet venturing inside the complex, you clearly see that some remarkable changes are occurring in the People's Republic of China. It's not just the modern imported manufacturing equipment installed on the huge shop floor that bespeaks the changes. It is perhaps what you don't see that is most telling.

Gone are the ubiquitous red banners that for decades had exhorted workers to toil for the glory of the Chinese Communist Party. Lou Xin, the plant's information systems manager, laughs at mention of the banners. "That was in the past. Now we're concerned about the business," he says.

* * *

Perhaps you find that excerpt from a previously published *Computerworld* story surprising. Perhaps it doesn't mesh with your image of what the inside of a state-run factory in China looks like, or what the plant's IT manager would say to a foreign reporter. Perhaps you'd be even more surprised to learn that I wrote it for a special *Computerworld* report on outstanding users of IT around the world that was published almost exactly 12 years ago.

One individual I'm certain would be surprised to learn that is William Archey, president and CEO of the AeA, the technology trade group formerly known as the American Electronics Association. A press release sent out last week to tout an AeA report on China's 15-year science and technology plan conveyed Archey's image of China as a place that's just now jumping on a bandwagon that the U.S. was riding 50 years ago.

China's plan "looks remarkably like the blueprint the United States developed in 1958 in response to the Soviet launch of *Sputnik*," Archey said. "Here we are months away from the 50th anniversary of *Sputnik*, and the Chinese are cribbing from our playbook. They see how successful it was in making the United States the preeminent scientific, technological and economic power on the planet."

To the AeA's credit, the report itself generally casts China as a formidable competitor that's to be respected rather than disparaged. "The United States cannot stop China's ascendancy, nor should it want to," the report correctly states. "U.S. technology companies will increasingly be able to partner with Chinese firms and research universities, spawning innovations that will benefit the entire world."

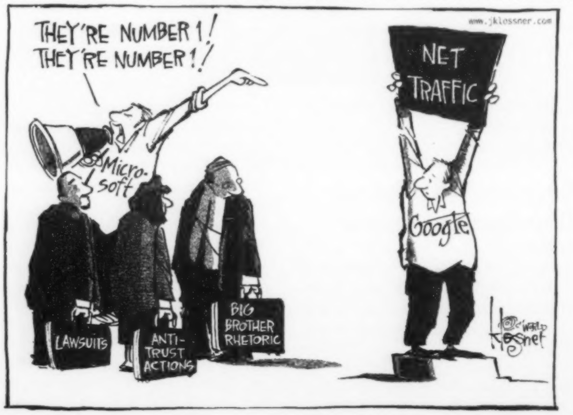
But what's odd is that at the same time, there's an undercurrent to the report that reflects the "we're better than you" attitude expressed by Archey.

"Though the goals outlined in the 15-Year Plan will not be easy to accomplish and are hardly a foregone conclusion," the report states, "the United States and other global powers should not underestimate China's ability to follow through on them and become an economic and technological equal."

I have no idea what other "global powers" the AeA is referring to, but the inference is that China doesn't warrant being included in that elite group. That's questionable enough in its own right, but there's a subtle message that's conveyed in expressing the point in terms of who is "equal" to whom.

It's a message of superiority. And as long as it exists, however subconsciously, it will be impossible for us to fully tap the potential of a partnership that could indeed benefit the entire world. ◗

Don Tennant



BEN ROTHKE

Security Isn't Just Avoiding Microsoft

WE'VE all heard IT professionals imagine how secure their networks would be if they just didn't have to use any Microsoft products.

I've had to listen to clients kvetch for hours on end about how Microsoft makes their lives miserable and how everything would be better in a Microsoft-free world. Tony Bove wrote a whole book with that theme, *Just Say No to Microsoft*, and plenty of blogs have taken up the cry.

It's time for all the people who have entertained this fantasy to stop deluding themselves.

How would life without Microsoft be different? It wouldn't be in any meaningful way for those in charge of network security; there would just be a different vendor peddling the dominant operating system.

BEN ROTHKE, CISSP, is a senior security consultant at International Network Services and the author of *Computer Security: 20 Things Every Employee Should Know* (McGraw-Hill, 2006). You can contact him at **ben.rothke@ins.com**.

Networks in a world in which Apple had won the operating systems wars would still be insecure. What's that, you say? The Macintosh has had far fewer bugs reported and patched than Windows? That's true, but it's a consequence of the minuscule market penetration of Mac OS. If the Mac had enjoyed a market share of upwards of 80% for the past couple of decades, it would have been the focus of every hacker and script kiddie on the planet. And you might be lamenting the minuscule market share of that scrappy operating system vendor in Redmond, Wash.

If you put computers on a network and open that network to the outside world via the Internet, you're going to have security problems, regardless of whether you're running Windows, Mac OS, Linux or an operating system you created in your spare time.

By all means, we need to run the safest operating system we can, fortify our networks and police the whole thing. But once we've done all that, we're left with one unalterable fact: Users will still make errors galore. Training can help. But for a bit of perspective, consider commercial air transportation. The hardware is about as safe as possible, and pilots are trained as thoroughly as surgeons. But accidents happen, and they're usually the result of pilot error.

User errors have long been the bane of security. In a sense, true security requires a paranoia honed to a fanatical edge, but sometimes even fanaticism isn't enough. After all, no one has surpassed the Nazis when it comes to fanatical paranoia. Yet even the well-trained German soldiers of World War II broke a fundamental rule of cryptography and reused the same keys. That mistake might be the only reason this article wasn't written in German.

So, what needs to be done? You must require users to attend formal information security training and awareness programs. No one should be left out. Set minimum security training and awareness requirements that all workers must meet — even janitors and others who have no system access. Step up the requirements for those who have access to corporate information systems (most workers would fall into this category), and establish exhaustive requirements for employees in computer-related positions of trust, such as security staff and systems programmers.

Your first step, if you haven't already done it, is to write down your information security policies. You can't design an effective training and awareness program without them.

Once you've set up effective training, you have to maintain it. Keep it consistent, and make sure users are up to date. It won't be easy. In fact, it's a lot easier to just blame Microsoft. But don't feel that all that kvetching didn't help. It took lots of people kvetching loudly for many years for Microsoft to realize that it had to do more, and it has made great strides since 2002, when it announced its Trustworthy Computing initiative.

Now it's your turn to do something similar within your own organization. ▪

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READERS' LETTERS

Tech Flops Are in the Eye of the Beholder

I READ WITH amusement your story about technology and concepts that were highly hyped but then flopped ["Don't Believe the Hype: The 21 Biggest Technology Flops," *Computerworld.com*, April 4]. I have had paralyzed arms and hands for 45 years, and two of those "flops" have not failed me – the paperless office and voice recognition. I can still type with one finger but have been unable to handle paper or write for about 10 years. I keep thousands of documents on my computers that I can find and send with ease. My working world is virtually paperless except for those folks who still require me to fax things. And starting with Voice Navigator II through several systems leading to Dragon NaturallySpeaking 9, which I'm using to dictate this e-mail, I have written three novels and do almost all of my office work with my voice. I think everyone, with a little patience, can benefit from the 150 words per minute and perfect spelling of voice recognition.

Ronald W. Hull
Technical services for facilities planning, Texas Southern University, Houston, Hull_RW@TSU.edu

I HAVE A couple more flops to suggest:

1. Javelin: It was supposed to supplant Lotus 1-2-3 as *the* spreadsheet of choice. It did, but only for the nine people who actually bought it.

2. Prodigy (circa 1988): Backed by IBM and Sears, it was supposed to be the killer service for online users. As an online direct marketing service – I mean, an online information system – Prodigy gained an enormous foothold with a cheap, closed, pre-Internet, pre-dot-com online service. It was, in many ways, what the Internet would become – a single monthly fee, a screen filled with advertisements (on every page) and myriad failed merchandising services (Prodigy's online grocery business went belly up long before all of the Johnny-come-latelies did).

The problem was that Prodigy did not understand the online market. They actually thought that people would log on just to shop, but we rarely did. So they started charging for the services that people actually wanted to use, like e-mail. When they started charging 25 cents for each e-mail beyond the first 30 in a month, they actually publicly claimed that it cost them 25 cents to process an e-mail and so they were just passing the costs along.

Brian Youngerman
Editor, "The Sports Bar" interactive sports newsletter, Philadelphia, Brian@sportsbusiness.com

MY CONTROVERSIAL addition would be Linux. It has never lived up to the hype of seven years ago. Back then, unless you were very computer-literate, you would not be able to install it on irregular hardware or correctly configure it to provide all the services and applications Windows users take for granted. Nowadays, Linux has caught up somewhat with providing the services (read: bells and whistles) that Windows users take for granted, but it has ballooned in size to become the bloatware that its earlier proponents had derided in Microsoft's offerings. When I installed Mandrake 8 with all the bells and whistles, it consumed over 3GB of hard disk.

And with so many variations of Linux, the user base has fragmented.

I will admit that for specific purposes, and with adequate support, Linux can be very good. But has it lived up to the hype it had back then? Definitely not!

Robert Gardner
Port Macquarie, New South Wales, Australia

OK, MICROSOFT'S Bob had a laughable GUI, but I liked the technology behind it. With Bob, Microsoft was introducing context-sensitive help. It monitored what operations the user was carrying out, and when it figured that the user was having difficulty, it offered help.

Don Boroughs
IS staffer, Michelin, Greenville, S.C.

Think Binary

THERE ARE 10 kinds of people in the world: those who understand binary, and those who don't. Thanks to Gary Anthes, there are probably a few more now who do ["Binary Basics," Strategies & Tactics, March 26]. Thanks for an engaging article on this basic topic.

Mark R. Everhart
Boise, Idaho

IRS Laptop Logic

HOW CAN IRS Commissioner Mark Everson be taken seriously when he says the IRS is "unaware" of identity theft tied to its stolen laptops ["Report: 490 IRS Laptops Lost or Stolen Over Nearly Three Years," *Computerworld.com*, April 5]? KnowledgeStorm and Nucleus Research published a study last year that showed that one-third of people write down their passwords – sometimes on Post-it notes attached to the computer itself. Statistically, of the 490 lost laptops, we should expect that 163 were stolen from people who wrote down passwords. Based on sheer numbers, the IRS has every reason to believe that some of the stolen laptops contributed to identity theft.

Roger Pumo
Batavia, Ill.

Readers Love Their Firefox Extensions

AS AN alternative to VideoDownloader, I suggest the UnPlug extension ["Top 10 Firefox Extensions to Avoid," *Computerworld.com*, April 10]. It can consult sites like VideoDownloader, but it defaults to just digging through the page locally to find video URLs. It works fine on all the video sites I've tried it on.

Josh Triplett
Ph.D. student, free and open-source software developer, Hillsboro, Ore., josh@freedesktop.org

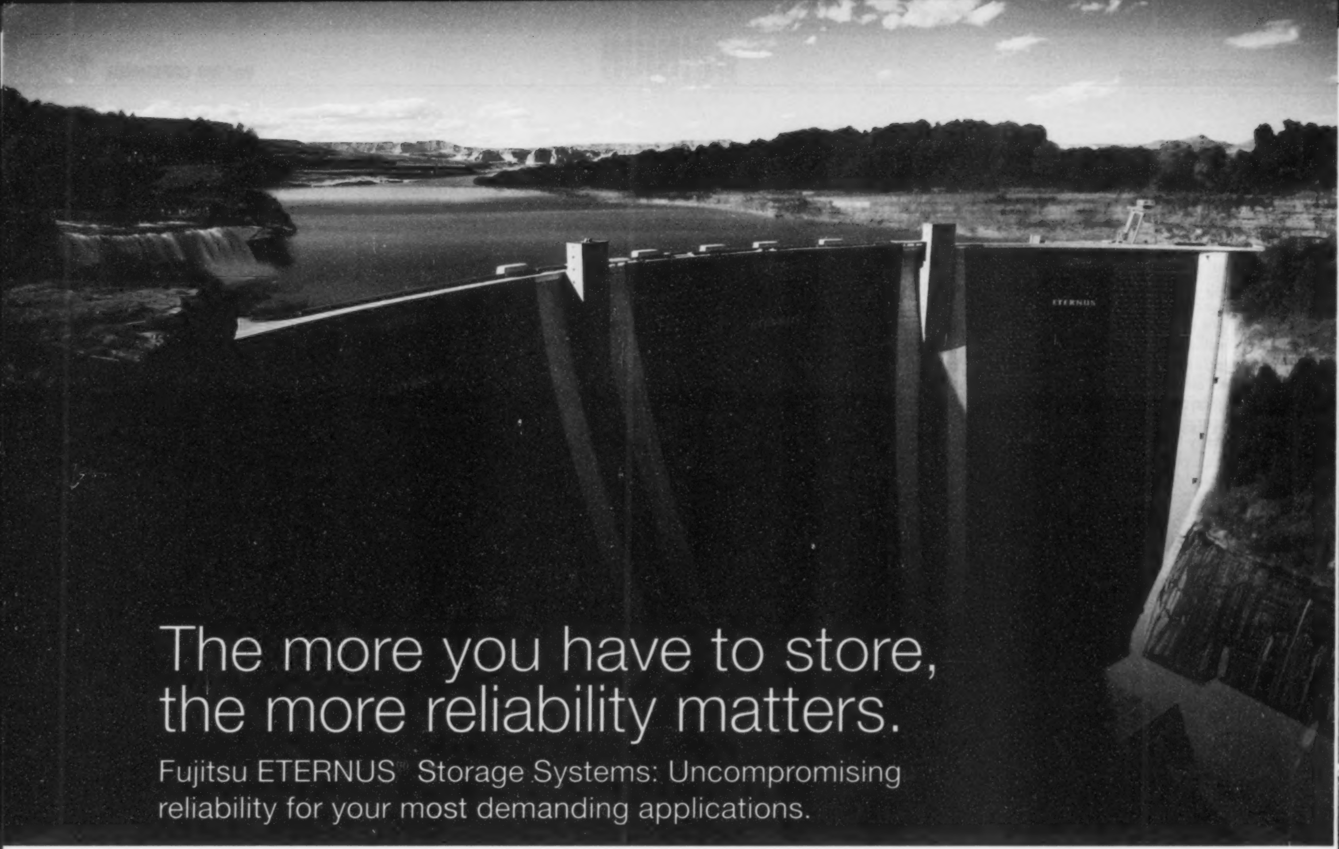
NOSCRIPT IS a must. There are too many Web pages that open you up to being hacked by simply viewing them. As for Adblock, I understand that most sites are driven by advertising, and I don't have an issue with some advertising. However, when your browsing time is spent dealing with more ads than content, I feel this add-on is worth it.

Todd M. Beedy
Owner, D&T Computer Consultants, Michigan, tbeedy@dntcc.com

IT IS nice to see that *Computerworld* finally recognizes users' needs regarding the fact that the advertisements on the Internet are out of control. Thank you for recommending Adblock Plus in your article. I really liked this trick – by telling people to avoid Adblock Plus for some lame reason, you made sure that everybody tried it out. From my Web site logs, I estimate that this article brought at least 50,000 new users for Adblock Plus in just one day. That's really great news – the more users install ad-blocking software, the more it will put advertisers under pressure to respect users.

Wladimir Palant
Software developer, AdblockPlus.org, Oslo, trev@adblockplus.org

COMPUTERWORLD welcomes comments from its readers. Letters will be edited for brevity and clarity. They should be addressed to Jamie Eckle, letters editor, Computerworld, PO Box 9171, 1 Speen Street, Framingham, Mass. 01701. Fax: (508) 879-4843. E-mail: letters@computerworld.com. Include an address and phone number for immediate verification.



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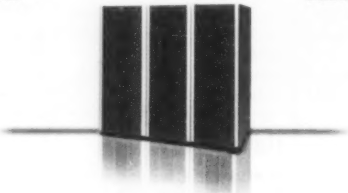

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STRATEGIES & TACTICS

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ILLUSTRATION BY MICHAEL WITTE

Crisis Over: Now What?

Once a data breach happens, what you do next makes all the difference.

The news just keeps getting worse: We now know that more than 45 million credit and debit card numbers were stolen in the TJX Companies Inc. data breach. Over the past few months, the scope of the problem seemed to grow with each announcement. The public didn't learn the (presumably) final toll until late March, when the Framingham, Mass.-based company filed the figures with the U.S. Securities and Exchange Commission.

Even now, with the news out there, company officials aren't eager to talk: Calls seeking comment for this story went unreturned. And this kind of response is all too common. Coverage of last month's massive BlackBerry outage stressed that users were less annoyed by the failure of service than by the lack of communication from the vendor, Research In Motion Ltd.

Yet IT executives who have successfully handled data breaches and other incidents say communication is actually one of the most effective ways to contain a crisis.

"Transparency both inside and outside the organization is very important, and an important role that a CIO can play is communicator," says Darryl Lemecha, CIO and senior vice president of shared services at ChoicePoint Inc., a data aggre-

BY MARY K. PRATT

gator in Alpharetta, Ga., that suffered a security breach in 2005 and learned firsthand the critical role that honest communication can play.

CIOs are making headlines these days, but not always for the right reasons. Security breaches, crashed Web sites and other public technical snafus create the kinds of crises that put IT leaders front and center.

Are you prepared?

You'd better be, because how you follow up in the immediate aftermath of a crisis can affect not only how the event is perceived, but also how successfully you'll avoid trouble in the future. It's not so much what occurred that matters, says Mike Tainter, IT service management practice director at Forsythe Solutions Group Inc. in Skokie, Ill. It's "how it was handled and communicated afterward. That's what really matters," he says.

As CIO, you can't leave crisis management to other executives, even if you're buried in the immediate task of solving the technical problem that precipitated the whole mess. You need to both lead the IT work and play a key role in the business's efforts to cope with the aftermath. Here's how:

■ Rely on your plan.

This is no time to wing it. "You shouldn't stand back and scratch your head and say, 'What should we do?' " Tainter says. Instead, get out your incident response plan and put it into action. As your IT people start running down the technical causes of the crisis, you should start implementing the plan that lays out your business responses, your key contacts, and your public and regulatory obligations.

■ Work with the right people.

"We're operating in two courts at the same time — the court of public relations and the court of law," says Joe Brennan, executive director of communication and marketing at Ohio University, which suffered a series of data breaches in 2006. "The CIO has to know that what the organization says and does can expose the company to legal risks."

To minimize such risks, reach out fast to the nontechnical folks who can help you, says Janice Malaszenko, who has served as CIO and chief technology officer at several Fortune 1,000 companies. Those people include human resources staffers, who can help deal with employee-related issues; public relations people, who might need to field questions from the media; and legal staffers, who will help craft responses to public and legal inquiries.

You also might need the chief financial officer to authorize emergency spending, accountants to track spending for insurance claims, or operations folks to work overtime to make adjustments as IT gets everything back up and running, Brennan says.

It's also important to touch base with executives from your vendor companies, says Dennis Fishback, CIO at Calpine Corp., an energy producer in San Jose. That way, you can reach them quickly if you can't get what you need through the normal chain of command.

■ Identify the problem, then dig deeper.

The recovery process must include a root-cause analysis, Malaszenko says. So while your IT team is containing the situation to prevent further damage, you and your staff must be analyzing the underlying problem to prevent it from happening again.

That's just the start, though. "Look around at the environment and ask what other scenarios or situations could happen," says George McBride, director of IT risk consulting at Aon Consulting Worldwide in Chicago.

If your firewall was breached, for example, look for other vulnerabilities that hackers could exploit. If your server crashed because of a bad patch, check whether other servers are using similar patches. "It's easy to forget this, because you're so focused on the problem at hand," McBride says.

Also, examine why the crisis wasn't averted in the first place by your early-warning processes and systems.

■ Communicate with all stakeholders.

After experiencing a technical meltdown, people want answers. It's your job to help supply them, Lemecha says.

Following ChoicePoint's 2005 breach, Lemecha made sure that various stakeholders — the board, customers, consumers, the IT organization, all ChoicePoint associates, the news media and regulatory bodies — knew what had happened and what was being done to fix it.

"Initially, I spent time on the phone with various business unit leaders, discussing with customers what actually happened and how the customers' data and our systems were secure," says Lemecha, who recalls speaking to one upset customer for two hours.

"He had a large number of misconceptions about ChoicePoint, the incident and the data that we maintained on consumers," Lemecha says. "At the end of the call, he was so pleased with what ChoicePoint was doing that he sent [CEO Derek Smith] a note congratulating us on our steps."

Lemecha talked with corporate information officers and their senior staffers and explained the steps IT was taking to protect information, such as the removal and truncation of sensitive data.

He also assisted in the preparation of

Continued on page 29

The Incident Response Plan

Here are some points that all IT-specific incident-response plans should include:

SCENARIOS: Pick incidents that are representative of the various crises that could hit, and then outline basic strategies and tactics to handle them.

THE TEAM: Identify which departments have roles to play, and name specific people as team members and backups. Go outside the company, too, and identify the key suppliers and service groups most likely to play a part during a crisis.

COMMUNICATION: Appoint a communications czar to get everyone talking during an emergency. Ensure that each team member has a list of bridge lines, conference call numbers and intranet sites for collaboration from diverse locations. Include on that list the home phone numbers, nonwork e-mail addresses and cell phone numbers for team members and backups.

RESPONSIBILITIES: Detail team members' responsibilities and authority so they can get right to work without having to seek approvals from higher-ups. Think about roles in layers – like customer communications, internal communications, partner communications and media communications. Be sure to include people to track spending and document the response. Also include guidelines that spell out the values that will guide the response. For example, getting accurate information to customers as quickly as possible could be an overriding principle for one company; safety could be the top concern for another.

SAFEKEEPING: Consider how and where the plan and accompanying documentation should be stored to guarantee both security and access during all sorts of scenarios. Some companies keep multiple copies on various media in several locations.

MANAGEMENT: Appoint someone to manage the document. That includes updating the plan and training new team members as employees come and go; organizing drills, tests and simulations; and improving the plan based on experience as incidents occur.

TESTING: Test your plan. Start with a walk-through to identify any glaring problems. Then simulate an actual event, watch what works and what doesn't, and learn and revise.

– MARY K. PRATT

Don't Compound The Problem

When you're coping with a crisis, sometimes what you don't do is as important as what you do. Here's some advice from CIOs who have been there:

Don't create a power vacuum. You or a designee should be available to make decisions as your workers try to identify the technical fixes needed to contain the crisis. Also, make it clear when and how workers should escalate disagreements, disputes or any other problems that they can't handle.

Don't promise anything you're not positive you can deliver. If you fail to deliver on promises, you can hurt your credibility and damage morale even further.

Don't push through too much change too fast. Your staff can probably handle a few weeks of round-the-clock work, particularly if they are rallied around fixing a problem. But they'll quickly burn out if they're forced to implement numerous improvements in the immediate aftermath of a crisis.

Don't be too hands-on. It's important to show solidarity with your IT staff, but you shouldn't spend too much time in the trenches. Instead, balance your time among all the constituencies you serve – your workers, your colleagues, the public, the CEO and the board.

– MARY K. PRATT

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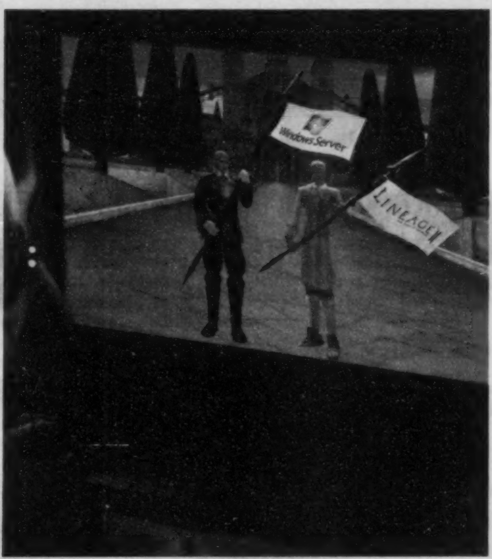
Microsoft

The Highly Reliable Times

VOLUME 1 – ISSUE 3

Windows Server 2003

NCsoft WON'T PLAY WITH LINUX, CHOOSES WINDOWS SERVER INSTEAD



Tom Nagy for The Highly Reliable Times

UP TO 400,000 GAMERS AROUND THE WORLD can connect to NCsoft's game service simultaneously.

EXCLUSIVE INTERVIEW:

"We directly compared Windows Server with Linux. Windows Server 2003 provided not only reliability, which is our first priority, but also development productivity in a 64-bit environment, and cost-efficiency. It was an easy choice to make."

– Kwak, Soon-wook, NCsoft Director/Chief of Publishing Unit

Reliability Is Essential for Online Game Company

By CHANG SUN PARK

SEOUL, Korea – NCsoft, an international online game company based in Korea, has an infrastructure that allows 400,000 users to connect to its game service simultaneously, with up to 10 million users per year all around the globe. To accommodate this load, NCsoft runs nearly 1,000 large-scale server farms capable of handling 40 terabytes of data. It is, in short, a massive system that cannot afford downtime.

That need for bulletproof reliability is why NCsoft chose Microsoft® Windows Server®, according to Kwak, Soon-wook, Director/Chief of Publishing Unit at NCsoft. "Before we implemented our server system, we directly compared Windows Server with Linux on a variety of different criteria. Windows Server 2003 provided not only reliability, which is our first priority, but also development productivity in a 64-bit environment, and cost-efficiency," said Kwak. "It was an easy choice to make."

Indeed, it was a choice that was critical to the continuing success of NCsoft, according to Corporate PR Team Leader Joo Young Kim. "The importance of online stability is paramount; in the case of games such as *Lineage 2*, our gaming contract with our customers states that an interruption lasting over four hours will result in consumer compensation. The Windows Server platform offers reliable service to hundreds of thousands of simultaneous online users, and therefore plays a crucial role in protecting the fantastic reputation that *Lineage* enjoys," said Kim.

For the full NCsoft story, plus other case studies and independent research findings on the reliability of Windows Server versus Linux, visit microsoft.com/getthefacts

SPECIAL REPORT: Stunning discovery of secret to success

NCsoft's Kwak, Soon-wook (left) stated yesterday that Windows Server is the secret behind maintaining the reliability and performance of their system. *– Continued on Page B3*

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Continued from page 26

board presentations and worked with others to create a Web site that offers consumers up-to-the-minute information on privacy efforts.

Eventually, "everybody participated in communicating to customers," Lemecha says. The business unit general managers coordinated the customer communication efforts, first by calling customers and later by distributing documents that explained ChoicePoint's privacy and security practices.

> **"You have to be an advocate for [your] people.**
>
> SHAWN OSTERMANN, FORMER INTERIM CIO, OHIO UNIVERSITY

"If we were to do it all over again, I would have all these materials in place upfront so that we could have distributed information to the media, regulatory bodies and customers — and posted information on our Web sites simultaneous with any consumer notices," Lemecha says. "This would reduce the amount of false information that [proliferates] on the Web in times of crisis."

After a crisis, he says, the CIO is uniquely qualified to communicate in virtually every direction. "The CIO is in the best situation to really understand all the technical issues, the business process issues and how they all come together," Lemecha says. He can "talk up to the executives and talk down to the technologists" about the direction the company is headed, as well as convey information outward to customers.

■ Connect with affected colleagues.

When hardware problems affected his company's energy trading operations, Fishback flew from his San Jose office to Houston to meet with his senior management team — a dozen or so officers and directors who are based there.

"It's important for them to see that the highest level of management is involved in trying to fix it," Fishback says, adding that face-to-face meetings are the only way to effectively convey that message and build the credibility and trust needed to move forward.

"They've got to know you've got some skin in the game and that your attention is fully focused on resolving the issue," he says.

■ Support your people.

Stress will be running high in the weeks after a crisis, with some employees even wondering if their jobs are on the line. But you won't get the best out of your workers if you let those doubts fester. Instead, back up your team.

"Acknowledge to the staff that you're not interested in boxing them around the head on why you're having a problem, but you're more interested in helping them solve the problem," says Fishback.

Shawn Ostermann, who served as interim CIO at Ohio University following the data security breach there, says he went to various meetings to show solidarity with staff but didn't call "all-hands meetings" that employees might see as wasting valuable work time.

On the other hand, he says he respected his staff's need for downtime, so despite the continuing crisis, he sometimes sent them out to grab lunch or to play volleyball to work off the stress.

"You have to be an advocate for [your] people," Ostermann says.

■ Move the organization ahead.

It might be tempting to take a break once the crisis has passed, but it's smarter to use that time while everyone is still engaged and energized to push through the changes that will prevent a repeat incident. The time after a crisis "is often a chance to polish up on policies," says Aon's McBride.

That means examining not only the organization's technology, but its people and procedures as well.

ChoicePoint did just that. Lemecha worked with other executives to conduct a process review following the 2005 security breach. As a result, they created or enhanced 90 policies and procedures to help prevent such a breach from happening again and added the new role of vice president of consumer advocacy.

■ Take a final look back.

Documenting your reaction to a crisis and holding a postmortem that examines your responses are crucial to learning from the event, McBride says. The postmortem needs to happen soon, while the incident is fresh in everyone's mind. This kind of analysis, he says, can help organizations develop "better and more efficient ways to respond to a crisis." ■

Pratt is a Computerworld *contributing writer in Waltham, Mass. Contact her at marykpratt@verizon.net.*

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Security Appliances: Are They Good Enough?

The answer depends on where, why and how they're used — and what else is in the mix.

By Drew Robb

BEST-OF-BREED security software lets data center operators tailor protection to their exact needs. But some midsize companies or branch offices without dedicated security experts may prefer a simpler approach.

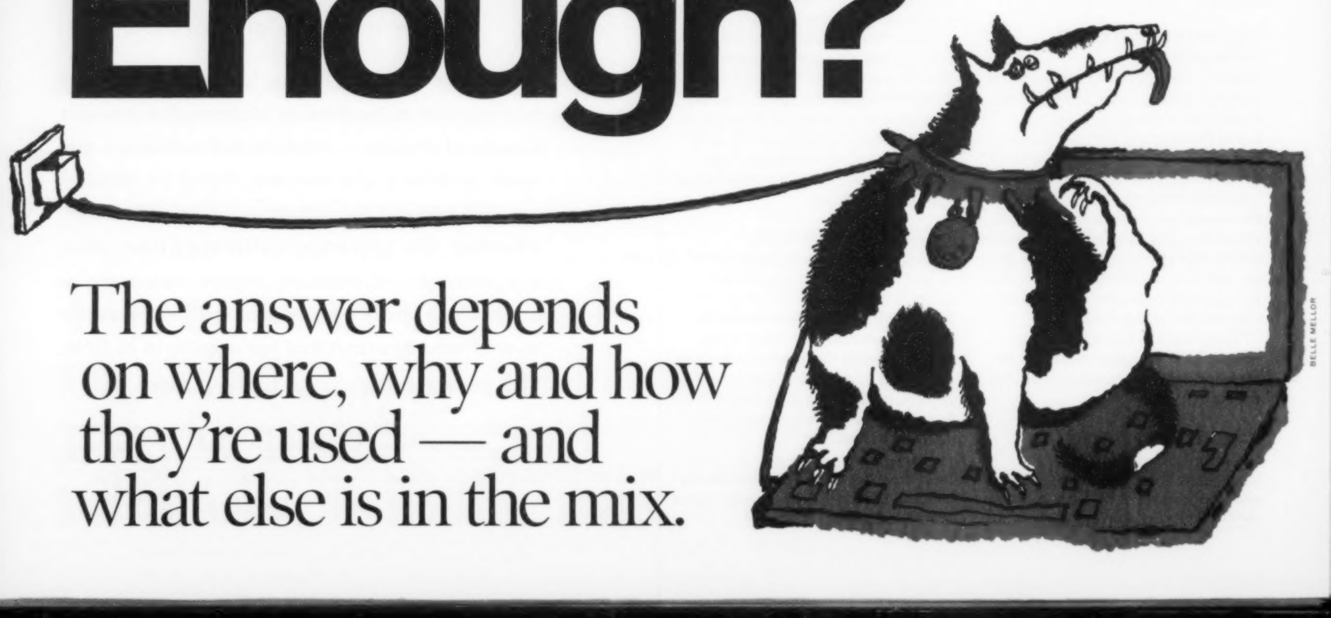
That was the situation Greg Muehl faced when securing the network connecting United Building Centers' (UBC) more than 200 lumberyards, manufacturing plants and millwork shops. He wanted to protect them, but he didn't have IT staff at those locations, nor did he want to overburden existing servers.

"We didn't want to put that additional load on the local servers by having them [encrypt and authenticate IP packets] with software, nor did we want to expose those servers to the danger of acting as border devices," says Muehl, information security senior analyst at UBC's Boston-based parent company, Pro-Build Holdings Inc., the nation's largest supplier of building materials to contractors.

Like other companies seeking low-hassle network security, UBC deployed a virtual private network/security appliance — in this case, Firebox SSL Core boxes from Watchguard Technologies Inc. in Seattle. They provide Secure Sockets Layer (SSL) encryption, firewalls with deep packet inspection (inspection of the data in the packet, not just the header), intrusion protection and access-control lists. Such hardware/software combinations are simple to install and manage but don't offer the highest levels of security. So the question prospective users need to answer is, how much security is good enough for a particular location?

Apparently, many users find that appliances provide enough security for their needs. "Appliances are growing because they're easier to install and easier to use," says Bruce Schneier, chief technology officer at Counterpane Internet Security Inc. in

Continued on page 32



BELLE MELLOR

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Continued from page 30

Mountain View, Calif. "They're not necessarily better or more secure, and in fact, you can get more security if you have more fine control [through dedicated security software]. But that takes know-how, and many customers don't have the expertise."

Box Boom

When looking to secure their systems, administrators have the option of either installing security software on a server or buying a security appliance with the software preinstalled. Security appliances come in two basic flavors: dedicated and multipurpose. Dedicated appliances provide a single security service such as firewall or antivirus protection. Multipurpose appliances are either networking devices such as routers that also incorporate security functions, or specialized security devices that provide suites of security services.

"With an appliance, you buy hardware and software, so you have a total solution," says Ken Poulin, vice president of operations at emergency messaging services provider Varolii Corp. in Bedford, Mass. He uses firewall and intrusion-detection appliances from Juniper Networks Inc. "If you just buy the software, you run into compatibility issues, so it is easier for me to go with a plug-and-play solution," he says.

Companies are increasingly adopting that approach, says Jeff Wilson, an analyst at Infonetics Research Inc. in Campbell, Calif. He says that security appliance sales are growing faster than security software sales. Infonetics figures show that while overall security appliance and software sales rose 15% to $4.6 billion in 2006, SSL VPN gateway appliance sales rose 40% after posting a 61% rise the previous year.

"What were formerly separate network elements or devices such as firewalls or VPNs are now on a single platform," says Aaron Vance, an analyst at Synergy Research Group Inc. in Reno, Nev. "We also see integration of those capabilities into more traditional network elements like routers and switches."

This is reflected in who leads the market: Networking giant Cisco Systems Inc., which offers hybrid security/networking products, has a 42% share, according to Synergy. The rest of the top five are a mix of networking and security firms: Check Point Software Technologies Ltd., Juniper Networks, Nokia Corp. and Symantec Corp.

Vance says that the growth of distributed networks is also driving the adoption of multifunction appliances as companies try to protect connections such as those among branch offices.

> "I am not a friend of the big Godzilla appliances that do everything, because they can't do everything well.

ANDRE GOLD,
DIRECTOR OF INFORMATION SECURITY, CONTINENTAL AIRLINES INC.

Midsize organizations with a limited number of IT security staffers find the multifunction appliance option attractive as well. The city of Encinitas, Calif., for example, installed a GateDefender appliance from Panda Software in Glendale, Calif., to block spam and malware at its six locations.

"I like that the appliance is updated automatically regarding both virus-like threats and spam filtration," says Rainer Mueller, IT analyst for the city. "This reduces the amount of time I need to administer the device."

Branching Out

In contrast, a central data center is more likely to have a series of single-purpose appliances acting as firewalls, VPN concentrators and intrusion-detection or -prevention systems.

"I use an appliance when I have a function that is clearly defined, that doesn't require a lot of configuration and that is pretty constant in terms of the threat I am trying to solve or the methodology I am using to solve it," says Andre Gold, director of information security at Continental Airlines Inc. in Houston. "Conversely, we have leveraged software when we wanted greater control, greater flexibility or have a situation that can't be black-boxed."

He also uses appliances for routine functions such as SSL authentication to establish secure connections. That lightens the burden on server CPUs, which would otherwise have to perform the task. But in the data center, Gold uses only dedicated appliances rather than multifunction models.

"Especially in the enterprise, I am not a friend of the big Godzilla appliances that do everything, because they can't do everything well," Gold says. "Vendors may show you marvelous numbers for their firewall performance, but turning on the [intrusion-prevention system] and other functions can cripple the device, and it won't be able to keep up with enterprise requirements."

By using separate appliances for each function, he can scale each box as needed to meet changing security requirements. The main data center, which is spread across two buildings at headquarters as well as six other locations, has a thorough, multilayered security mix. It includes LANShield appliances from ConSentry Inc. in Milpitas, Calif., Cisco firewall appliances, and software such as McAfee Inc.'s Total Protection security suite.

But for Continental's hundreds of airport ticket counters, maintenance facilities and city sales offices, that level of security is overkill. In those areas, it uses Cisco VPN 3002 hardware clients to provide firewall and VPN services; they will soon include antivirus and intrusion-prevention software as well.

"I am not as interested in making huge investments in these technologies to support the small offices with five staffers and no corporate IT on their servers, compared to what I do for 5,000 people at headquarters," says Gold. "This is where appliances really shine, especially when you have multifunction appliances."

So, which way should you go in securing a network — hardware or software? While the capabilities of appliances continue to grow, the users consulted for this story said they wouldn't trust their entire security operations to such a product, especially an "all-in-one" appliance. Muehl, for instance, continues to use antivirus software on the servers and workstations at UBC's branches rather than activating the antivirus module available for the Firebox appliance.

The users also noted that appliances improve their security posture and simplify management. But they all said they harness appliances as part of a layered security approach, often using them at the gateways or to offload certain functions from the servers while running antivirus and intrusion-protection software on servers and workstations.

"There isn't a single product in the universe that is good enough to be a complete solution for anything," says Counterpane's Schneier. "Every security product has value, and none is a panacea." ▸

Robb is a Computerworld *contributing writer in Los Angeles. Contact him at drewrobb@attbi.com.*

Who's Using What

Vendors offer a wide variety of security options. Here's what some users have deployed:

City of Encinitas

- The **GateDefender Performa 8100** multifunction appliance from Panda Software filters content (such as large files, compressed files and password-protected files), defends against malware (viruses, worms, Trojan horses, dialers, jokes, phishing, hacking tools, zero-day threats), and offers antispam and Web content filtering capabilities.

Continental Airlines

- At headquarters, **Cisco Systems firewalls** and **ConSentry LANShield Controller Network Admission Control** appliances provide role-based access controls to restrict user activity on the LAN. The LANShield appliances can detect malware and quarantine a segment of the network so viruses and worms don't spread throughout the enterprise. They can also enforce policies on endpoint devices.
- At remote locations, **Cisco VPN 3002 hardware clients** provide encryption and a VPN tunnel and act as a Dynamic Host Configuration Protocol server for as many as 253 devices at the site. The 3002 enforces security policies from the central network site and has an optional eight-port switch.

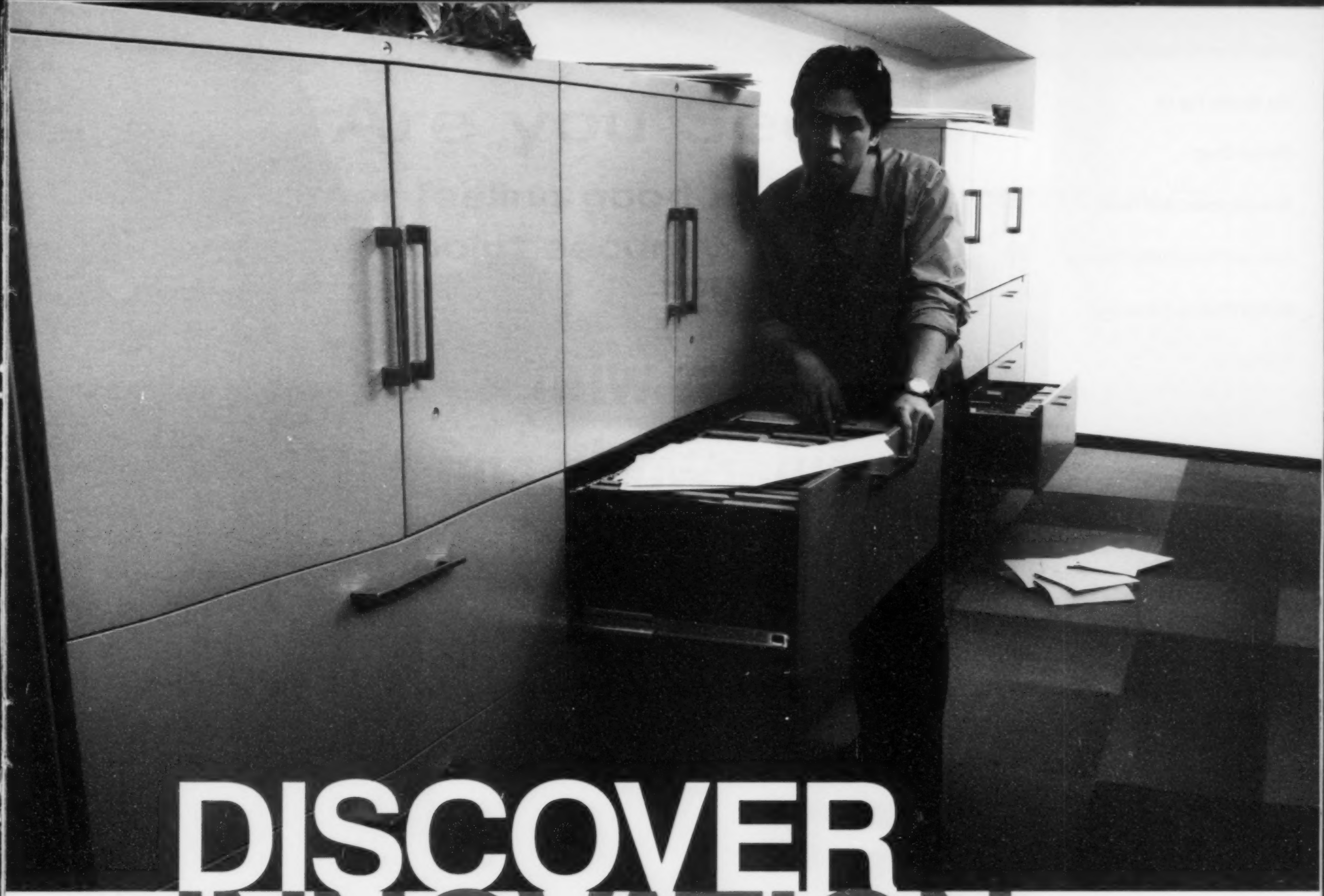
Varolii Corp.

- **Juniper Networks Integrated Security Gateway (ISG)** is a combined firewall, VPN and intrusion-detection and -prevention device. ISG operates at up to 2Gbit/sec. It can be partitioned into multiple virtual security domains with different administrators and policies.

United Building Centers

- At branch offices, UBC uses **WatchGuard Firebox SSL Core Gateway** appliances. These verify endpoint security settings, have firewalls with deep packet inspection and create an SSL VPN connection. There is a **Unified Threat Management** plug-in for protection against malware, spam and network intrusions, but the company uses antivirus software on the servers and workstations rather than the plug-in.

– DREW ROBB



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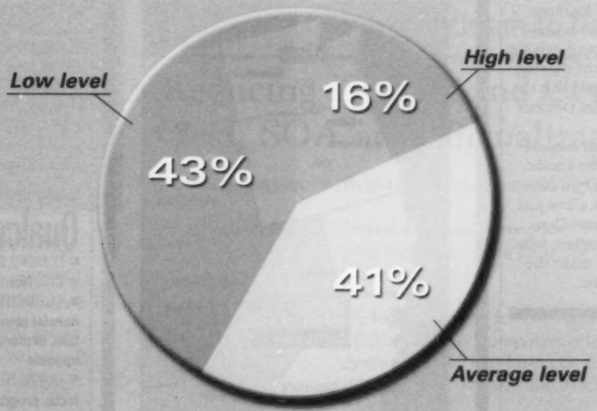

Source: CIO/Computerworld/CSO online survey, January 2007, 516 respondents involved in security strategy

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Left Coast Perks

BY JENNIFER McADAMS

Big-city culture offsets the big-ticket housing prices for these Best Places to Work.

BEST PLACES SHOWCASE: PACIFIC

COSMOPOLITAN LIVING, access to "extreme" recreational activities and proximity to vibrant cultural meccas like Los Angeles, San Francisco and Seattle are factors that draw technology workers in droves to the nation's Pacific region. Typically, the only thing standing in the way of a West Coast wannabe's dream is affordability or, more accurately, a lack of affordability.

Though it's hard to make the case that a move to the exciting West Coast is a pragmatic decision, some local officials argue that now is a good time to make the trip. The Silicon Valley Association of Realtors (Silvar) in January declared that the area is "experiencing a return to normal conditions," meaning that a four-year housing boom has showed signs of slowing. The California governor's office recently said that the median price of existing homes fell 4% from October 2005 to October 2006.

Granted, these figures may provide small consolation to the IT worker poised to give in to the Pacific region's allure. "Affordability continues to be a concern, because the median income does not allow just anyone to buy a house in the area," says Janet Case, Silvar's executive officer. Still, for those workers who are eager for sun and fun and are ready to make the ultimate change, renting is always an option.

Charles Schwab & Co.

- IT HEAD COUNT: **1,567**
- CIO: **Gideon Sasson**
- CURRENT IT PROJECTS: **Infrastructure upgrades, client platforms, client processes and brokerage systems simplification**
- CURRENT IT OPENINGS: **Hiring for a wide range of positions, including business systems specialists, project managers, data modelers, systems administrators, IT managers, database administrators, information systems engineers, software application engineers and solutions architects.**
- EXCITEMENT ABOUNDS: Along with exposure to the latest technology and IT projects, excitement is front and center at Charles Schwab. "Working in San Francisco affords a lot of choices when it comes to having fun," says Christopher Hiller, a senior software engineer, who says "Schwabbies" often flock together after hours.

Hiller and other IT staff members at the financial services powerhouse are afforded many workplace opportunities as well. "Project work is abundant at the company, and most staffers have an opportunity to participate in a variety of initiatives throughout the year," says Zachary Limachar, an analyst in the access management division of Schwab's IT division, STech. "In the contact I have with techies at other companies, I've found that most often Schwabbies have equal or better access to new or advanced technology."

Currently, Limachar is working on STech's move to adopt Oracle Identity Manager user-provisioning software. While Limachar and other STech staffers say they maintain a laserlike focus on customers' needs, the IT staff is increasingly able to look inward. "We are gradually becoming as focused on our internal customers as we have always been on our external clients," Limachar says.

Meanwhile, outward-facing opportunities are many. Hiller says he is working on several Web-based applications for both Schwab.com and Schwab Bank. "These projects have ranged from providing secure credit card features through our affiliate network to designing an integrated balance page displaying a complete summary of a customer's accounts at Schwab," Hiller says.

Though the cost of living in San Francisco remains high, the frenzied pace of the Internet boom has slowed, and the quality of life for many IT workers in the area has improved. Schwab tends to look for technology workers who can do more than pull all-nighters, Hiller says. "I think my ability to analyze a problem from different angles and drill down to the specific needs of a project from a high level has helped me become successful," he says.

Qualcomm Inc.

- IT HEAD COUNT: **828**
- CIO: **Norm Fjeldheim**
- CURRENT IT PROJECTS: **Legal e-discovery tools, a financial planning and forecasting system, server virtualization, demand management and simulation, and an Oracle upgrade**
- CURRENT IT OPENINGS: **Systems analysts and architects, programmers and Oracle applications administrators. Visit *http://jobs.qualcomm.com/staffing* for more.**
- TAKE THE PLUNGE: Sure, California is expensive, but it's not so bad once you've bought your first home. Plus, the Pacific coast's climate and professional opportunities can mean luxury cars and long, warm days, says Norm Fjeldheim, CIO at Qualcomm in San Diego.

"I was talking to some employees the other day about the daylight-saving time change. To them, this means riding their bikes to work every day instead of every other day," Fjeldheim says.

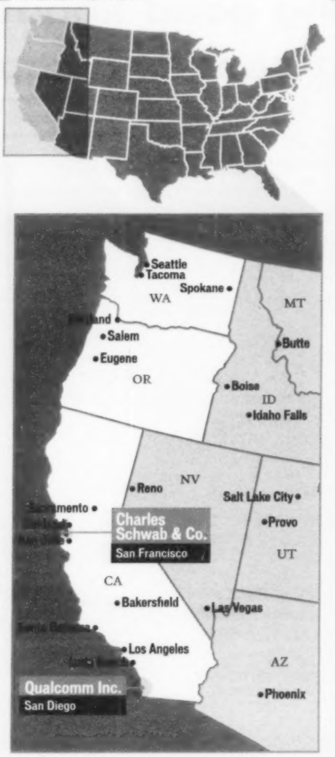
Though Qualcomm's location is a major factor in its ability to attract top IT talent, opportunities also play a major role, according to Fjeldheim. "We have literally hundreds of opportunities," he says, ticking off projects such as Oracle ERP rollouts, supply chain efforts and a major initiative to double the size of the company's largest data center.

Like top executives at many technology firms, Qualcomm officials encourage workers to venture out. "A few years ago, a team came to me and said they'd like to try out virtualization software from VMware. It was pretty cutting-edge, but we did a small pilot that exceeded all our expectations," says Fjeldheim.

While not all forays pay off, at Qualcomm there is no penalty for trying. "Some of the technical ideas people have suggested didn't work out," Fjeldheim says, "but here, people are not punished for taking a bit of a risk." ◗

McAdams is a freelance writer in Vienna, Va. Contact her at JMTechWriter@aol.com.

WHERE ARE THEY?



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9:00am to 9:40am	**IT Infrastructure for the Agile Enterprise** Michael Hugos, Computerworld Columnist, CIO at Large and Author of *CIO Best Practices: Enabling Strategic Value with Information Technology* and *The Greatest Innovation Since the Assembly Line*
9:40am to 10:20am	**Case Study: National Cancer Institute for Bioinformatics (NCICB)** Peter A. Covitz, Ph.D., Chief Operating Officer, National Cancer Institute Center for Bioinformatics (NCICB)
10:20am to 10:35am	**Refreshment and Networking Break**
10:35am to 11:15am	**Enabling a Dynamic IT Infrastructure** Al Zmyslowski, Senior Vice President of Engineering, Fujitsu Computer Systems
11:15am to Noon	**Moderated Panel Discussion** Moderator: Julia King, Executive Editor of Events, National Correspondent, Computerworld Panelists: Michael Hugos, Computerworld Columnist, CIO at Large and Author; Peter A. Covitz, Ph.D., Chief Operating Officer, National Cancer Institute Center for Bioinformatics (NCICB); Al Zmyslowski, Senior Vice President of Engineering, Fujitsu Computer Systems; Paul Turner, Senior Director, Network Appliance; Thomas Gronbach, Principal Director, Oracle

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QUICK STUDY

BY RUSSELL KAY

THERE'S A new contender coming to the realm of nonvolatile memory and storage, which enables data to remain intact when the power has been shut off.

For decades, the chief medium here has been magnetic disk. But as computers get smaller and require more and quicker storage, disk drives are lagging behind in satisfying many users' needs.

The most recent technology to gain widespread acceptance is flash memory. USB flash drives and memory cards the size of a thumbnail that can hold several gigabytes have become important, especially for newer multimegapixel digital cameras. In 2005, consumers worldwide bought nearly $12 billion worth of flash products, and the market should top $20 billion this year.

But as storage and speed requirements increase, seemingly with each new product generation, flash memory is reaching the end of its ability to keep pace. The technology can scale up only so far as the processes used to make these chips reach both practical and theoretical limits.

The new kid on the block is another solid-state technology, phase-change random access memory. Known as PRAM or PCM, it uses a medium called chalcogenide, a glassy substance containing sulphur, selenium or tellurium. These silvery semiconductors, as soft as lead, have the unique property that their physical state (i.e., the arrangement of their atoms) can be changed from crystalline to amorphous through the application of heat. The two states have very different electrical resistance properties that can be easily measured, making chalcogenide ideal for data storage.

PRAM is not the first use of chalcogenide for storage. The same material is used in rewritable optical media (CD-RW and DVD-RW), in which a laser heats up a small spot on the disk's inner layer to between 300 and 600 degrees Celsius for an instant. That alters the arrangement of atoms in that spot and changes the material's refractive index in a way that can be optically measured.

PRAM uses electrical current instead of laser light to trigger the structural change. An electrical charge just a few nanoseconds in duration melts the chalcogenide in a given spot; when the charge ends, the spot's temperature drops so quickly that the disorganized atoms freeze in place before they can rearrange themselves back into their regular, crystalline order.

Going in the other direction, the process applies a longer, less-intense current that warms the amorphous patch without melting it. This energizes the atoms just enough that they rearrange themselves into a crystalline lattice, which is characterized by lower energy or electrical resistance.

To read the recorded information, a probe measures the electrical resistance of the spot. The amorphous state's high resistance is read as a binary 0; the lower-resistance, crystalline state is a 1.

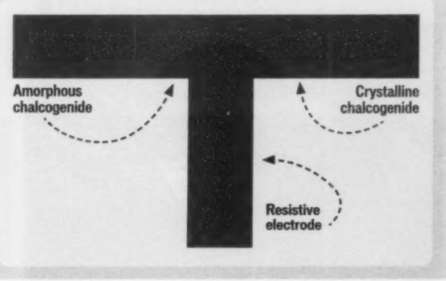
Speed Potential

PRAM enables the rewriting of data without a separate erase step, giving the memory the potential to be 30 times faster than flash, but its access, or read, speeds don't yet match those of flash.

Once they do, PRAM-based end-user devices should quickly become available, including bigger and faster USB drives and solid-state disks. PRAM is also expected to last at least 10 times as long as flash, both in terms of the number of write/rewrite cycles and the length of data retention. Ultimately, PRAM speeds will match or exceed those of dynamic RAM but will be produced at lower cost and won't need DRAM's constant, power-consuming refreshing.

HOW PRAM'S PHASE CHANGE WORKS

This simplified diagram shows one spot on a PRAM chip where an electrical current has changed the state of the chalcogenide substrate from crystalline to amorphous.



PRAM also holds out the possibility of newer, faster computer designs that eliminate the use of multiple tiers of system memory. PRAM is expected to substitute for flash, DRAM and static RAM, which will simplify and speed up memory processing.

A person using a computer with PRAM could turn it off and back on and pick up right where he left off — and he could do so immediately or 10 years later. Such computers would not lose critical data in a system crash or when the power went out unexpectedly. "Instant-on" would become a reality, and users would no longer have to wait for a system to boot up and load DRAM. PRAM memory could also significantly increase battery life for portable devices.

History

Interest in chalcogenide materials began with discoveries made by Stanford R. Ovshinsky of Energy Conversion Devices Inc., now known as ECD Ovonics, in Rochester Hills, Mich. His work revealed the potential for using those materials in both electronic and optical data storage. In 1966, he filed his first patent on phase-change technology.

In 1999, the company formed Ovonyx Inc. to commercialize PRAM, which it calls Ovonic Universal Memory. ECD licensed all of its intellectual property in this area to Ovonyx, which has since licensed the technology to Lockheed Martin Corp., Intel Corp., Samsung Electronics Co., IBM, Sony Corp., Matsushita Electric Industrial Co.'s Panasonic unit and others. Ovonyx's licenses center around the use of a specific alloy of germanium, antimony and tellurium.

Intel invested in Ovonyx in 2000 and 2005 and has announced a major initiative to replace certain types of flash memory with PRAM. Intel has built sample devices and plans to use PRAM to replace NAND flash. It hopes to eventually use PRAM in place of DRAM. Intel expects Moore's Law to apply to PRAM development in terms of cell capacity and speed.

As yet, no commercial PRAM products have reached the market. Commercial products are expected in 2008. Intel expects to show sample devices this year, and last fall Samsung Electronics showed a 512Mbit working prototype. In addition, BAE Systems has introduced a radiation-hardened chip, which it calls C-RAM, intended for use in outer space. ▶

Kay is a Computerworld *contributing writer in Worcester, Mass. You can contact him at russkay@charter.net.*

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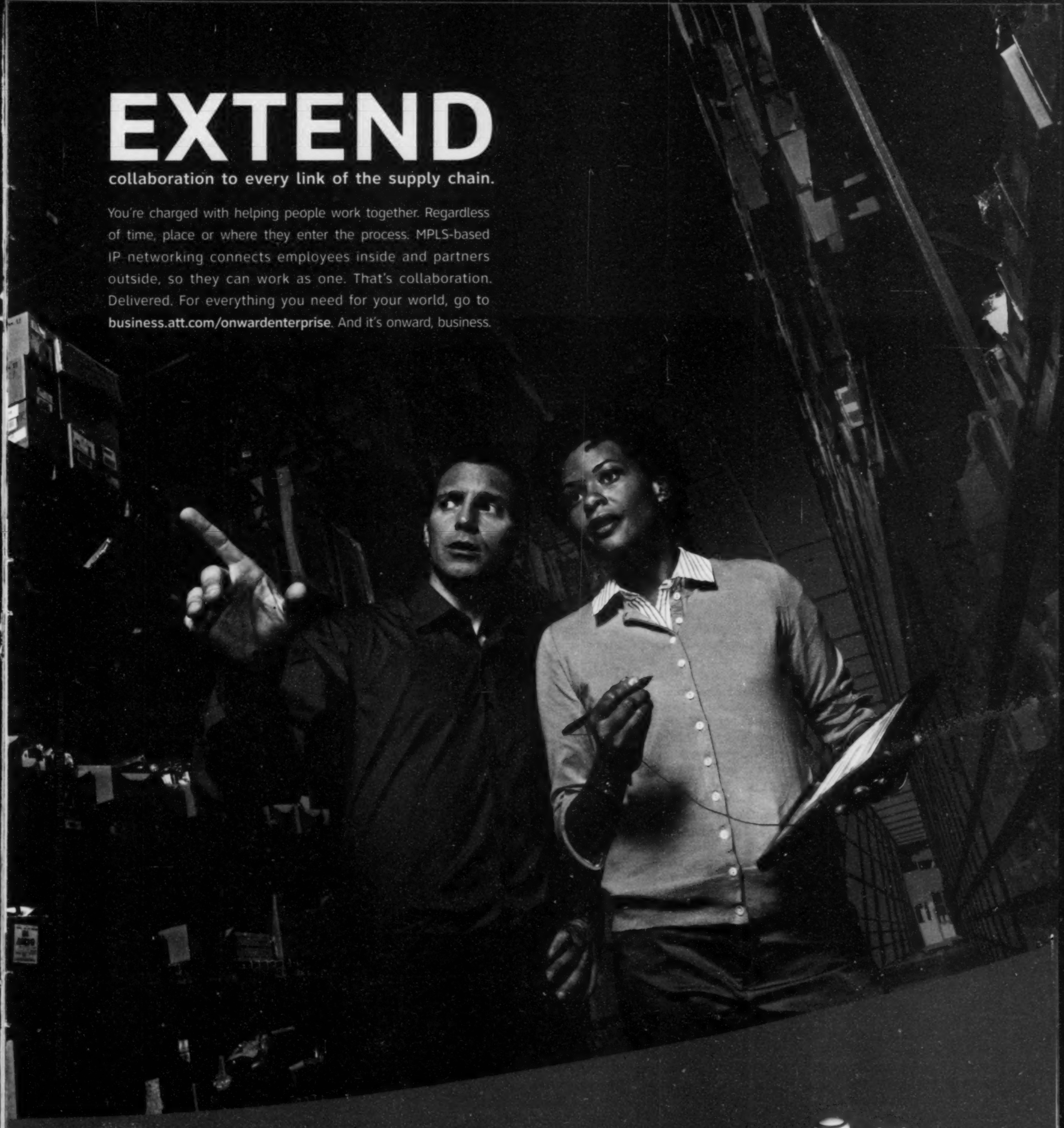

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When Offshoring Comes to Infosec

Our manager gets word that some information security operations will be outsourced, and it has him worried. By Mathias Thurman

SECURITY MANAGER'S JOURNAL

OFFSHORING IT work is nothing new for my company, but I have dreaded the day when I would be asked to offshore some of our information security work. So, when I tell you that I spent last week in India, you'll understand that it wasn't just the jet lag that had me feeling harried.

When it comes to budgets, IT is not a high priority for my company. Most internal investment is in product development, because that is what keeps us competitive and makes money. In every other area, we are always looking for ways to cut costs, and for several years, we've been doing that by moving certain jobs and functions to lower-cost countries. We outsource some of our product source code development to Russia, hardware engineering to China, training and knowledge management to Singapore, and application development and engineering to India. I understand the reasoning behind moving certain operational and support tasks offshore, and I believe the cost savings far outweigh the risks. But information security is another story entirely, and I don't say that because I want to protect my turf. I'm talking about protecting the company.

In the hiring process, we hold security engineers to a higher standard than other employees, since in giving them the ability to access our critical infrastructure, we are giving them the keys to the kingdom. If security engineers are going to effectively protect intellectual property and detect network intrusions, they have to be able to monitor all network and employee activity. While no employee should expect privacy on a corporate network, the truth is that many people engage in very private personal and business matters at work. We have to be careful about whom we put in a position to be privy to all that sensitive information. Having people offshore do that work makes me very uncomfortable.

So, there I was in India, trying to put my mind at ease. I was very impressed with the security operations of one of the Indian companies I visited. Its network operations center put my company's in-house capabilities to shame. The Indian company has invested heavily in enterprise-class monitoring, configuration management, documentation, process and procedures.

But while offshoring would let us take advantage of certain economies of scale, the trade-off is a lack of oversight and security. One key will be retaining control of all that I can while leveraging the budgetary advantages of a lower-cost workforce. Take Tripwire as an example. We use it to monitor changes to files. If we outsourced this activity, I would insist that we in the U.S. continue to define policies (that is, which files are to get monitored), while the actual execution of the policy and the monitoring operations themselves would be moved to India. I would still be responsible for compliance, oversight and escalation, but the day-to-day operational activities would be conducted overseas.

> Success could depend on the effective use of metrics.

The success of any outsourcing of information security activities could depend on the effective use of metrics, in addition to our retaining ultimate control as operations are moved offshore. We already use metrics extensively for our in-house information security operations. Let me give you an idea of what we measure.

The Metric Mix

Our IT executives like to see metrics from the various IT divisions so they can measure the effectiveness of the organizations and make suggestions for improvement. Upon my return from India, I was told that the IT security quarterly scorecard needed to be updated, and I had only a day to put it together. Information security currently reports four metrics each quarter.

The first is the number of managed laptops and desktops that are running the current Trend Micro antivirus pattern file, a metric that's easily obtained from the Trend Micro Control Manager. We strive for 95% compliance. This quarter, we were down by three percentage points, but that was only because we recently acquired a large company that hadn't completely cut over to our virus standard.

The second metric is the number of managed systems that meet the current recommended patch level. We use Microsoft SMS to obtain this information, and we look for 90% compliance. We were at 84% this quarter because the desktop folks have been unable to properly deploy patches to some remote offices.

The third metric is the percentage of the network being monitored by the intrusion-detection system. Our goal is to monitor 80% of the network, but this quarter, we covered only about 18% of the traffic, down from 24% in the previous quarter. The reason for the drop is that we have increased the number of network nodes with no offsetting increase in intrusion sensors. The acquisition was a factor, but so was a network rearchitecture that we have undertaken to better segment the network.

The fourth metric is the percentage of security tickets that are resolved within the parameters of our service-level agreement, which depend on the priority of the ticket. For this quarter, we did very well, resolving 90% of the security-related tickets in a timely manner.

These metrics are of value to me as well as to the executive staff. They tell me where we have deficiencies and where I need to add people and money, assuming either is available. Too often, neither is. But there's no question that offshoring will boost the resources available to me, and metrics should help me evaluate the effectiveness of what we're doing and monitor compliance with security policies. It won't be easy to let go of these security operations, but I can at least maintain the knowledge that I'm still in charge and ultimately responsible.

If you have had globalization experiences, I would love to hear your stories. ▶

WHAT DO YOU THINK?

This week's journal is written by a real security manager, "Mathias Thurman," whose name and employer have been disguised for obvious reasons. Contact him at mathias_thurman@yahoo.com, or join the discussions in our security blogs: **computerworld.com/blogs/security**.

To find a complete archive of our Security Manager's Journals, go online to **computerworld.com/secjournal**.

SECURITY LOG

IT Pros Fear Severe Data Breaches

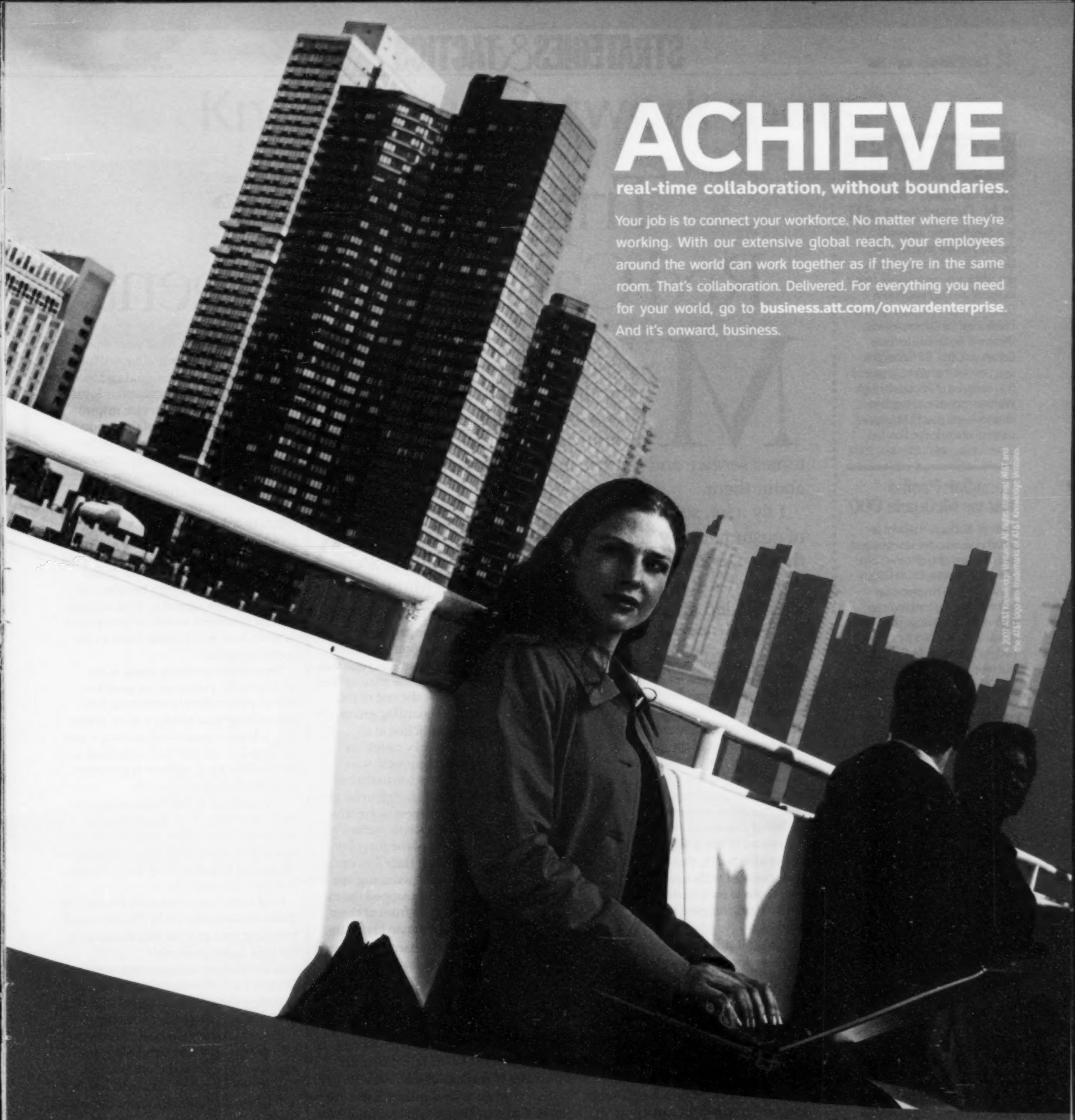
One third of 1,400 IT professionals surveyed by McAfee Inc. worldwide earlier this year said they believe that a major data breach could put their companies out of business. Nonetheless, the respondents reported average spending on data security of only 0.5% of the IT budget. And 60% of the respondents said their companies had experienced a data loss of some type in the past year. Other findings: 61% believe data leaks are caused by insiders, and 23% attribute those leaks to malicious intent.

Spam Up in Volume And Total Cost

Total spam has risen 222% since November 2005, with 125% of the increase occurring in the past six months, according to Postini Inc. Spammers have gone from distributing self-propagating Internet worm viruses to creating botnets. Meanwhile, a Ferris Research report estimated the cost of spam for U.S. businesses, including productivity loss, at $17 billion for 2005, up from $10 billion in 2003.

Start-up Enters The Virus Fight

Start-up Robot Genius Inc. claims that its client software offers a new way to fight malware. Spyberus uses a driver-based filtering technique to monitor and track all installed files on a system. The company says Spyberus detects malware and reverses malware infections using a feature called Take Control to stop malware-hijacked processes. Robot Genius plans to make Spyberus available as a free client for Windows XP and 32-bit Vista this month.



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EXEC TRACK

Soto to Lead First N.M. Department of IT

Roy Soto has been appointed secretary of New Mexico's new Department of Information Technology, which was created by the recent merger of the Chief Information Office with the Information Systems Division and the Communications Division of the General Services Department. Gov. Bill Richardson says Soto will lead efforts to expand IT to every part of the state through initiatives such as cyberacademies, distance learning and a high-speed research infrastructure. Soto has served as the state's CIO since 2004.

Canadian Pacific Names McQuade COO

Kathryn McQuade has been selected to be executive vice president and chief operating officer at Canadian Pacific Railway Ltd. in Calgary, Alberta. She will be responsible for integrating the company's operations, IT and strategic sourcing groups when she joins the railway on June 1. Currently, McQuade is executive vice president of planning and CIO at Norfolk Southern Corp. in Norfolk, Va.

Mayberry-Stewart Takes N.Y. CIO Post

Melodie Mayberry-Stewart has been named CIO for New York state. Previously, she was chief technology officer for the city of Cleveland. Earlier in her career, she founded Black Diamond IT Consulting Group. Prior to that, she worked in IT management roles at companies including Amoco Oil Co. and Community Health Corp.

Gupta Chosen CIO at Heidrick & Struggles

Heidrick & Struggles International Inc. announced that **Sanjay Gupta** has joined the Chicago-based executive search firm as senior vice president and CIO. He will report to CEO L. Kevin Kelly. Previously, he was managing partner at Gartner Inc. Before that, Gupta was a business analyst and strategic planner at Ford Motor Co. Earlier in his career, Gupta worked in India at units of Caterpillar Inc., Hewlett-Packard Co. and Yamaha Corp.'s motorcycle division.

PAUL GLEN

Tripping on the Red Carpet Treatment

MY FAVORITE AIRLINE recently gave me the red carpet treatment, and I didn't like it one bit. It reminded me of the abject stupidity of some of our generally accepted notions about customer service and that we need to think more carefully about them.

I fly a lot, so I've gotten to see almost every variation of customer service, disservice and abuse that you can think of. Some are the result of insightful policy. Some are the result of the initiative of local staff. Many are the unintended aftereffects of overworked people trying to have a good time on the job.

PAUL GLEN is the founder of the *GeekLeaders.com* Web community and the author of the award-winning book *Leading Geeks: How to Manage and Lead People Who Deliver Technology* (Jossey-Bass, 2003). Contact him at [illegible]

But this one was new. The red carpet treatment was part of the boarding process. The airline had decided to take the narrow opening in front of the gate door and separate it into two aisles instead of one by using those ubiquitous retractable nylon web straps on top of aluminum poles. So instead of one aisle of reasonable width, there were two just wide enough for people to pass in single file dragging luggage behind them.

The right side was exclusively for first-class passengers and the well-heeled homeless who live on airplanes. The other side was for the rest of us. On the side for the special people, they had laid out a little red carpet — really: a crimson bath mat emblazoned with the logo of the airline. On the other side, nothing but the standard old gray industrial-fiber tangle that passes for carpeting.

Then they proceeded with the boarding process. First they called the special people to board. They dutifully lined up on the right of the divide and passed the gate agent by treading upon the bath mat. Of course, no one was lined up in the regular line. In fact, at the end of the special boarding group, no one was in line at all.

Then they called my group, the people who travel way too much but not quite enough to be special. The most aggressive of those people walked to the right of the rope, but just before their feet could touch the sacred rug, the gate agent snapped the nylon strap in front of them forcing them to crawl under the barrier straps to enter the correct lane to board the plane.

This humorous scene struck me as a great example of why some of our most common assumptions about customer service sometimes go wrong.

Here the airline seemed to be misapplying the old 80-20 rule. There are dozens of variants of this, but here they seemed to be thinking about the "80% of your business comes from 20% of your customers, so take really good care of them" version. There's a good deal of truth to this one, but you have to be careful about how you apply it.

Think hard about what your volume customers really want: What will provide them with both rational and emotional incentives to remain your loyal customers? Can your service inspire them to consume more of the product or service you offer? Can your perks persuade them to shift their consumption patterns to choose you over your competition more often?

If special treatment is likely to be effective, ask yourself how visible it should be. Rewarding loyalty among the volume customers is important, but you don't want to alienate the lesser ones. Some of them may become volume customers someday. Will making special treatment visible inspire others to want it, or will it cause them to become resentful?

Then think carefully about what type of value you're trying to add to fire up your volume customers. Are you making your product more attractive, adding comfort and making it easier to use, or are you just appealing to their pride? Each of these approaches is valid when used properly.

On my flight, I didn't notice any signs of ecstasy or pride among the anointed. None of the magnificent few seemed to care a whit about stepping on the red mat. And they normally get to board first anyway.

I did notice annoyance on the part of those inconvenienced by the narrowed boarding area and the officiousness of the gate agent, however.

In IT, we have volume customers too. Do yours get the equivalent of the red carpet — the pointless appeal to vanity that alienates more than it attracts?

How you treat your best customers affects how all your clients view you and your service. So before you roll out the red carpet, think about how it will feel to all your customers, big and small. ▸

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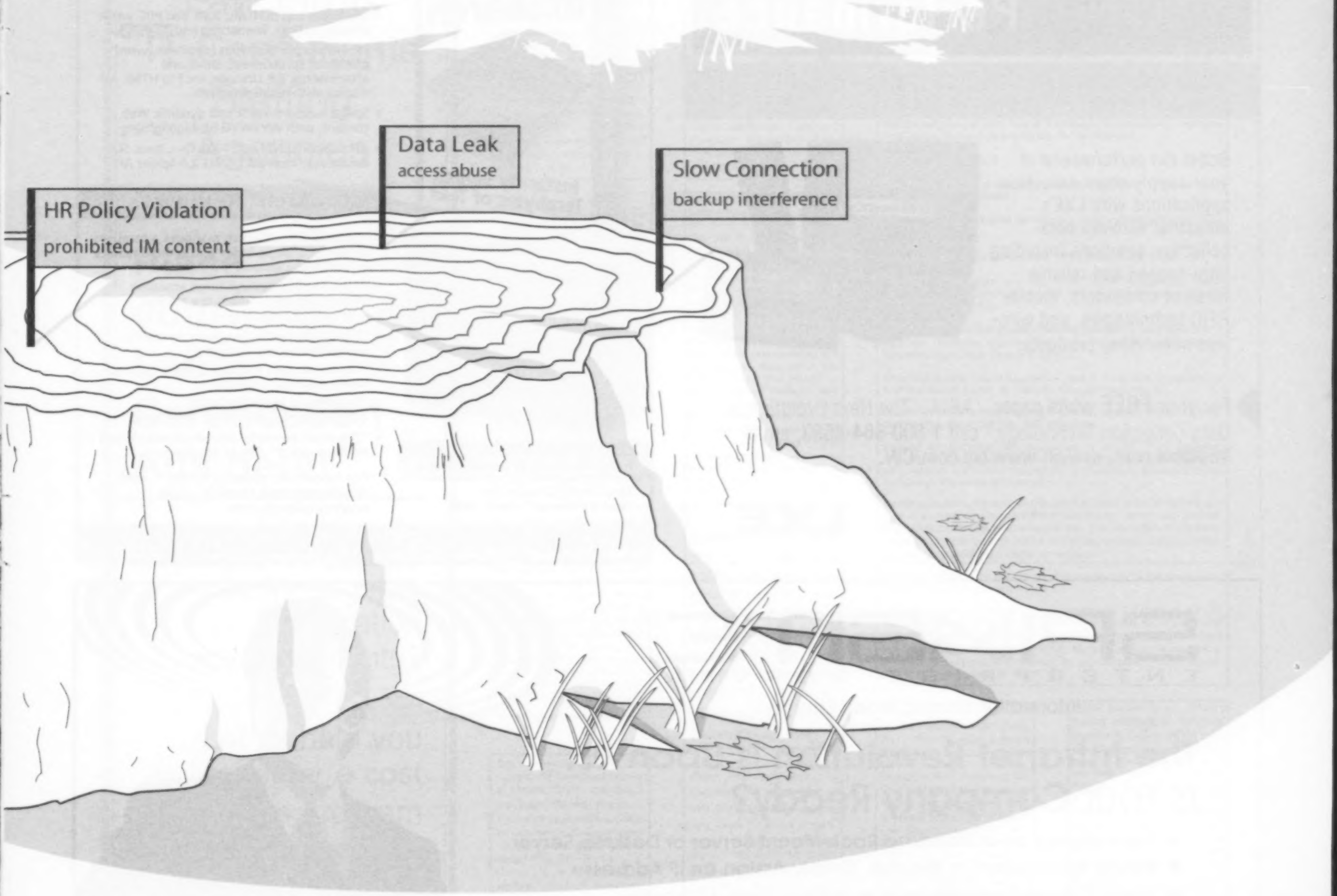

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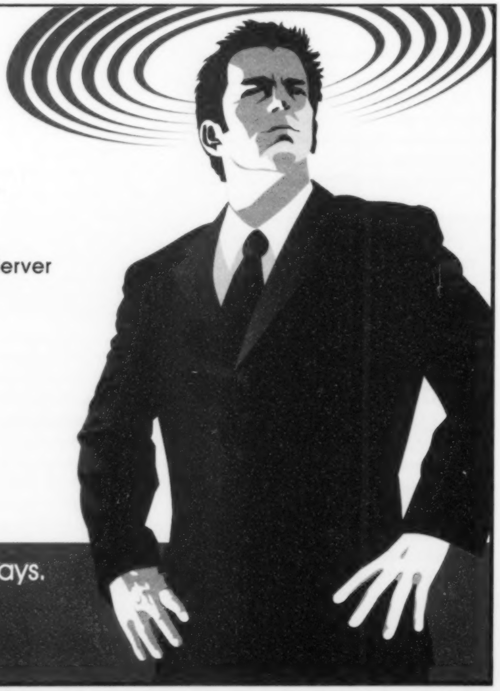

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File Serving Bolsters CGI Film Development

Studio expects a 50% increase in storage efficiency

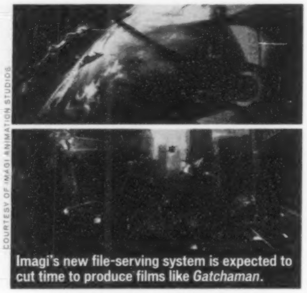
BY BRIAN FONSECA

Imagi Animation Studios has pledged to deliver a computer-generated imagery (CGI) animated film to movie audiences every eight months. Since that process typically takes 18 months now, the studio knew it would have to give its storage environment a proverbial shot in the arm if it was to have any chance of hitting the self-imposed deadline.

To shorten the production process so dramatically, Imagi's IT managers knew they needed a technology that could alleviate storage bottlenecks and improve substandard system performance caused by the constant accessing of tens of thousands of files in the digital animation rendering process.

Imagi expects that Ibrix Inc.'s Fusion file-serving software, now being installed, will improve its file-serving efficiency by 50% and thus slice the time needed to produce two Japanese superhero-themed films — *Gatchaman* in 2008 and *Astro Boy* in 2009 — said Peter Pang, MIS manager at the studio, a subsidiary of Imagi International Holdings Ltd. in Hong Kong.

"In the past, storage was too often the bottleneck of the rendering process," said Pang, who noted that a 90-minute CGI film features around 10 million frames. "With the vast amount of data involved in the 3-D rendering process, even the slightest hitch in the storage system will be amplified exponentially to an uncontrollable situation."



COURTESY OF IMAGI ANIMATION STUDIOS

Imagi's new file-serving system is expected to cut time to produce films like *Gatchaman*.

Pang said that animators and render farms — computer clusters that render CGI — are constantly battling for resources on a storage system. Very often, the same file is simultaneously accessed by hundreds of rendering nodes and dozens of animators, he said.

Animation rendering requires systems to add processors and cache at will to pump more memory into an array while also improving performance and reducing latency, Pang said.

By parallelizing I/O from the compute nodes to the data storage, Ibrix's file-serving technology creates a very large software "pipe" between the compute elements and the storage system in order to free resources for massive file-access demands, he said.

Imagi Studios currently runs a Hewlett-Packard Co. StorageWorks Enterprise Virtual Array 5000 and a Network Appliance Inc. F940C filer, both of which are Linux-based.

Imagi now uses the NetApp device for rendering applications, a job that's becoming more difficult as the massive I/O demands increase. Pang said that the Ibrix technology should fix that problem.

Imagi Studios is installing 16 Dell servers to run the Fusion technology and an EMC Corp. Clariion CX3-80 array for Tier 1 storage. The older HP and NetApp systems will form the Tier 2 storage system.

Imagi's current environment supports 40TB of storage. Pang projected that the EMC array and Ibrix tool will increase that capacity to 100TB.

"[Ibrix's] efficient 4GB/1GB read/write throughput alone is a big improvement over our previous 1GB/300MB system, plus the functionality of separating read/write requests into individual segments," Pang said. ▸

Continued from page 1

Crunch

That's partly because the increased demand is creating competition for IT workers, and partly because some employers are seeking people with a range of skills that may be hard to find. For instance, Ramsay said the University of Miami was looking for someone who had policy and administrative skills, a technical background in security with certifications, and the ability to address key issues such as identity management.

In addition, there may be more reluctance among IT workers to move to new jobs than there has been in the past, said some technology managers and recruiters. "The market is picking up," said Nate Viall, president of Nate Viall and Associates, a Des Moines-based company that recruits workers for jobs involving IBM's System i server line. But Viall added that some of the IT staffers he has encountered are wary about switching jobs.

"People are cautious," said Viall. "They either got burned themselves at the beginning of the decade or know three friends that did."

Steven Strout, CIO at Morris Communications Co. in Augusta, Ga., said via e-mail that he also thinks IT workers aren't jumping at new job opportunities. "People seem to be a little scared of the economic times and are 'living with the devil they know,' " Strout wrote. But he noted that despite the hiring difficulties, he is filling the open positions at Morris, a media company that owns publishing, radio broadcasting and outdoor advertising businesses.

Market Trends

Last week, The Conference Board Inc. said that about 4.37 million online job advertisements were placed in April, a 24% increase from the same month a year ago. Of that total, approximately 323,000 ads were in the "computer and mathematical" category, which is defined by the U.S. Bureau of Labor Statistics as including occupations such as computer programmer and database administrator. The online ads in that category were up about 15% from last April, The Conference Board reported.

Gad Levanon, an economist at the New York-based executive association and research organization, said the year-over-year increases in online ads could signal an improvement in the job market. Levanon said it may also be an indication of a tight labor supply, such that companies "need to advertise more aggressively because the number of people looking for jobs is smaller."

The AeA, a Washington-based trade group formerly known as the American Electronics Association, said in a report released April 24 that there were 5.8 million high-tech jobs in the U.S. last year — up by 3% year over year. In 2005, the number of jobs grew by only about 1%, the AeA said.

Last December, Robert Half Technology said its quarterly survey of more than 1,400 CIOs showed that 16% planned to hire additional IT staffers during this year's first quarter, while 2% planned to make cutbacks. The net positive of 14% was the highest that the Menlo Park, Calif.-based recruiting firm had seen since the fourth quarter of 2001.

The firm reported in March that 14% of the respondents to its latest survey said they expected to add IT workers during this quarter, with 2% again planning reductions. "It's harder to fill jobs because the demand is so great," said Brian Gabrielson, a vice president at Robert Half Technology.

David Foote, CEO and chief research officer at Foote Partners LLC in New Canaan, Conn., described the current IT job market as "robust." The need for workers who have SAP or .Net skills is high, and business analysts and enterprise architects are also in demand, according to Foote. "Nobody can find enough architects," he said.

Another issue is that many employers are getting very specific about the workers they're looking for, Foote said. For instance, he said, a company may want someone who has experience on a certain SAP application module or with the Information Technology Infrastructure Library. ▸

Job Creators

CIOs cite business growth as the top factor driving IT hiring, followed by a need for more tech support workers.

Windows Server systems administration is the skill set most in demand, followed by network administration.

IT execs at companies with 1,000 or more employees will be the most active in hiring new workers during Q2.

BASE: More than 1,400 CIOs from U.S. companies with 100 or more employees, surveyed during this year's first quarter

SOURCE: ROBERT HALF TECHNOLOGY, MENLO PARK, CALIF.

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8:00am to Noon

Reducing IT Cost and Complexity via Grid, SOA and Virtualization

8:00am to 8:45am	**Registration and Networking Breakfast**
8:45am to 9:00am	**Introduction and Overview** Julia King, Executive Editor of Events, National Correspondent, Computerworld
9:00am to 9:40am	**IT Infrastructure for the Agile Enterprise** Michael Hugos, Computerworld Columnist, CIO at Large and Author of CIO *Best Practices: Enabling Strategic Value with Information Technology* and *The Greatest Innovation Since the Assembly Line*
9:40am to 10:20am	**Case Study: The Special Olympics** André Mendes, Chief Information Officer, The Special Olympics
10:20am to 10:35am	**Refreshment and Networking Break**
10:35am to 11:15am	**Enabling a Dynamic IT Infrastructure** Paul Turner, Senior Director, Network Appliance
11:15am to Noon	**Moderated Panel Discussion** Moderator: Julia King, Executive Editor of Events, National Correspondent, Computerworld Panelists: Michael Hugos, Computerworld Columnist and CIO at Large; André Mendes, Chief Information Officer, The Special Olympics; Paul Turner, Senior Director, Network Appliance; Thomas Gronbach, Principal Director, Oracle; Ed Franklin, Senior Director, Fujitsu Computer Systems

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FRANK HAYES ■ FRANKLY SPEAKING

Software Town

“SOFTWARE PRICES will eventually fall to zero. The open-source software movement has already started that commoditization.” That pronouncement came last week from MIT professor Michael A. Cusumano at a one-day Silicon Valley conference called “The New Software Industry.”

If that sounds too good to be true to corporate IT shops that are forever squeezed by software costs, well, yeah, it is.

About a week earlier, I had dinner with open-source deep-thinker Eric S. Raymond, author of *The Cathedral and the Bazaar.* Raymond told me about the essay he’s working on now. His conclusion, put simply: Software *can’t* be commoditized.

Are these guys both living in the same universe? Sure. They’re just living on two different sides of Software Town.

In Cusumano’s commercial-software neighborhood, the days of the software package with a stranglehold on its market are gone — and the reason is open source. Microsoft and Oracle may swallow their commercial competitors, but they can’t buy out the persistent competition of free open-source software.

The result: Software is becoming a commodity, and prices will collapse. Cusumano thinks the only way software companies can survive is through services — either selling software as a service or offering add-on services along with their software products. So we’ll still get squeezed, but for services instead of for software itself.

It’s hard to see how Cusumano could conclude that software prices will have to drop to zero — especially in an economy where clever marketing can sell a bottle of tap water for $1.39.

Still, software *is* becoming a commodity — isn’t it?

Across town in the open-source neighborhood, Raymond says no. Open source isn’t commoditizing software, he argues — just modularizing it.

Software isn’t like hardware. After 200 years of industrialization, we understand the value of commodity hardware. We want standard nuts that fit on standard bolts, standard tires that fit on standard wheels and standard memory that fits in standard motherboard sockets. Interchangeable parts introduce manufacturing economies of scale, while custom pieces don’t add enough value to be worth the trouble.

But software is far easier to adjust than hardware. Small tweaks can suddenly make software far more useful to some customers, but without the expensive retooling that hardware requires. The cost of differentiation is small, the value high. That makes software nearly commoditization-proof.

Instead, Raymond says, open source is forcing software to break up into modules — stand-alone chunks of software that can be plugged together.

Modules don’t have to be identical — just act alike. So as long as the interfaces are standard and the functionality matches up, an open-source module can replace one that’s proprietary.

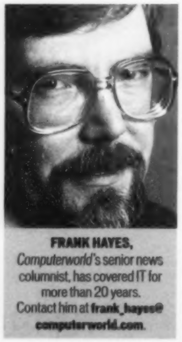
And unlike hardware, software modules don’t have to be physically in the same place to connect up. You don’t need Google’s software on your servers to create a Google Maps mashup. You don’t need to know where Google’s software is, and the mashup benefits from Google’s ability to update the maps and the engine — so long as the module keeps the same interface.

As Raymond told me, “Modularization makes mashups possible.”

What he didn’t say is that modularization opens the door just as wide for proprietary software as for open source. Sure, an open-source module can replace a chunk of proprietary software — or, instead, modules from several different vendors can compete for the same spot, each with its own distinctive advantages for some users.

That would mean no zero pricing, but maybe a lot more value for IT shops. It would mean no more one-size-fits-all, but a much better match to what our businesses need if we really can plug together the right pieces from proprietary, open-source and software-as-a-service sources.

And, just maybe, it would mean there’s still money to be made in Software Town. ▸



FRANK HAYES, *Computerworld*’s senior news columnist, has covered IT for more than 20 years. Contact him at **frank_hayes@computerworld.com**.

SHARK TANK

Good Ideas, Bad Ideas

For almost a year, this IT pilot fish has noticed an ad hoc wireless network at work called “cybercafe.” With few neighbors near the office, fish figures it’s odd but doesn’t worry about it – until his boss discovers it. “He came to me asking, ‘But who is it?’ over and over, and my only response was ‘It’s not us,’ ” says fish. “He said it’s now my priority to find out what it is. Server relocations and rebuilds have been put on hold, tape backup issues are growing cold. I now spend my days packet-sniffing on a network that has no DHCP server, broadcasting a MAC address that doesn’t belong to any of our company’s equipment. At least I’m enjoying my vacation from real work.”

Why Not?

This CIO is a BlackBerry addict, and when the service goes down, he immediately calls his help desk. “He issued an escalation order insisting that our analysts get on the problem immediately and provide hourly updates on their progress – even though we have no control over the issue,” says a pilot fish on the receiving end. “Fifteen minutes later, he again called to chew out the help desk coordinator for not knowing procedures. Seems that he wasn’t receiving his escalation notices on his BlackBerry.”

A Little Knowledge

This CIO’s laptop is getting old, and it freezes up now and then because of a bug in the BIOS. “The tech dispatched to his desk did a reset on it via a handy little hole in the bottom and a paper clip,” says a pilot fish on the scene. “Sometime later, the CIO got a new laptop and called into the help desk suggesting that the laptop was broken because it wouldn’t reset. Same tech dispatched back to look at the new laptop finds a paper clip sticking out of the microphone hole, along with a disk full of non-IT-issued software. It sure looked like a reset button to him.”

Another Satisfied Lousy Typist

PC vendor support pilot fish takes a call from an older user who complains that he can’t see his password when he types it in – just a row of asterisks. “I explained to him that it’s a feature, because no one else should know his password,” says fish. “But he kept insisting that he wanted to see it. So, not able to convince him, I asked him to open Notepad and type his password. He did so, was happy to see it and was very grateful to me.”

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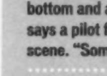

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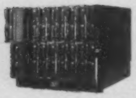

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